Now with bonus **NetGuide** section inside

PC USER

AUSTRALIAN

SEPTEMBER 2009

AUSTRALIA'S TOP-SELLING TECHNOLOGY MAGAZINE

Windows 7
Your complete kickstart guide

Try it yourself with Windows 7 RC on the cover DVD!

LAPTOPS TESTED
30

Netbooks & performance notebooks for all budgets & needs

SEPTEMBER 2009 EXCLUSIVE SOFTWARE / VIDEO GUIDES / RESOURCE KIT / GAMES

PC USER DVD

our next OS
the official Windows 7
lease Candidate (RC):
fully working pre-release
sion of Microsoft's new
erating system!

Windows 7
Release Candidate

Windows 7 virtual machine

PC USER
VIRTUAL MACHINE SHOP 2
RLD SOURCE
2 MONTH

stall Windows 7 RC easily,
without affecting your main
or XP installation, using
exclusive PC User Virtual
chine Shop 2 SE software.

Windows 7 tutorial

PC USER
EXCLUSIVE VIDEOS
EXCLUSIVE VIDEO

How to install Windows 7 RC
using PC User Virtual Machine
Shop 2 SE, get started with
the new OS and more.

Advanced burning toolkit

Ashampoo
Burning Studio
VALUED AT $64

Burning CDs, DVDs and Blu-ray
discs just got easier with
Ashampoo Burning Studio 2009
Advanced Magazine Edition.

Free security suite

PC Tools
INTERNET SECURITY
VALUED AT $89
FULL 12-MONTH LICENCE

The latest version of PC Tools
Internet Security 2009 includes
antivirus, firewall, 12 months
of free updates and more.

Windows Vista **Vista Service Pack 2**
Save yourself a big download — we've got the latest major update for Windows Vista plus Internet Explorer 8 here.

DSLR shootout
The best-value cameras for keen photographers

Connect your car
20 Bluetooth and iPod FM transmitter kits reviewed

Genealogy guide
Plus: how to fix photos and digital TV recordings

20 iPod speakers
Plus: iPhone 3GS vs HTC Magic touch phone

IF YOUR COVER DISC IS MISSING, PLEASE ENQUIRE AT PLACE OF PURCHASE

$8.95 inc. GST
NZ$9.00 inc. GST

acp magazines

09
9 313006 001416

ADSL2+

LOW-COST INTERNET

10GB = $29.99 PER MONTH

= 3GB Peak (9am-1am) + 7GB Off peak (1am-9am)

x 18 MONTHS = $539.82

• UPLOADS NOT COUNTED • NO EXCESS FEES • NO SURPRISE BILLS

FREE IPTV

Bloomberg TELEVISION | AL JAZEERA | 資訊台 | PLAYBOY | CHANNEL NewsAsia
DW DEUTSCHE WELLE | TRT int | INDIAN TV | GREEK TV | THAI TV5

^AT SELECTED EXCHANGES. UP TO 30 CHANNELS - IPTV DOES NOT COUNT TOWARDS DOWNLOAD QUOTA.

^BUNDLE
MOBILE

NO CONTRACT
Buy as many as you want

$14.99 PER MONTH = $300

Calls, Text & Data
CONDITIONS APPLY

+ ONCE OFF $20 SIM = $34.99 MIN CHARGES

DEPOSIT OF $20 ALSO REQUIRED FOR ANY EXCLUDED OR EXCESS USAGE.

FREE 20 minute TPG Mobile to TPG Mobile calls between 8pm & midnight*

WHY PAY MORE?

🖊 tpg.com.au   13 14 23

TPG

Contents

INSIDE THIS ISSUE

_COVER STORY

Windows 7

YOUR COMPLETE KICKSTART GUIDE

STARTS ON PAGE 54

30 laptops tested

STARTS ON PAGE 42

_OTHER FEATURES

DSLR SHOOTOUT
PAGE 24

CONNECT YOUR CAR
PAGE 36

GENEALOGY GUIDE
PAGE 108

20 iPOD SPEAKERS
PAGE 30

VALUED AT OVER $50,000

SUBSCRIBE AND WIN!

Subscribe for a chance to win an adventure skiing holiday to Canada.

Reviews

IN THIS ISSUE

Privacy notice

This issue of *PC User* may contain offers, competitions or surveys which require you to provide information about yourself if you choose to enter or take part in them (Reader Offer). If you provide information about yourself to ACP Magazines Ltd (ACP), ACP will use this information to provide you with the products or services you have requested, and may supply your information to contractors that help ACP to do this. ACP will also use your information to inform you of other ACP publications, products, services and events. ACP may also give your information to organisations that are providing special prizes or offers and that are clearly associated with the Reader Offer. Unless you tell us not to, we may give your information to other organisations that may use it to inform you about other products, services or events or to give you access to the information ACP holds about you, please contact ACP's Privacy Officer at ACP Magazines Ltd, 54-58 Park St, Sydney, NSW 2000.

Ad list

DVD Contents

Keen to install Windows 7 Release Candidate (RC) from this month's cover DVD? As Microsoft's best operating system since Windows XP, it's certainly well worth checking out. But first, please make sure you carefully read our Windows 7 feature on page 54 and the installation instructions on the cover disc.

Another option is to install Windows 7 RC in a virtual machine using our exclusive PC User Virtual Machine Shop 2 SE software, as explained on page 62. Also on this month's cover DVD, you'll find Windows Vista Service Pack 2, a full 12-month licence of PC Tools Internet Security 2009 and much more.

SEPTEMBER 2009   EXCLUSIVE SOFTWARE / VIDEO GUIDES / RESOURCE KIT / GAMES   **PC USER DVD**

Your next OS

It's the official Windows 7 Release Candidate (RC); the fully working pre-release version of Microsoft's new operating system!

Windows 7
Release Candidate

Using the DVD

The *PC User* cover DVD requires a DVD-ROM drive. Internet Explorer 6 or later is recommended for easy installation of the software. Most of the software on the disc requires a fairly recent version of Windows, although each program has individual requirements, which are indicated on the disc. **Please note** the other requirements and limitations on the DVD cover. **Don't have a DVD drive?** We'll mail you a free CD with selected software from the DVD. Just go to **www. pcuser.com.au/cdmail**. This month's CD code is **PCUCD0909A**. **Need help?** See the back cover of the DVD for details on how to use the DVD and how to get help.

Windows 7 virtual machine
PC USER VIRTUAL MACHINE SHOP 2
WORLD EXCLUSIVE
Install Windows 7 RC easily, without affecting your main Vista or XP installation, using our exclusive PC User Virtual Machine Shop 2 SE software.

Windows 7 tutorial
PC USER EXCLUSIVE VIDEOS
EXCLUSIVE VIDEO
How to install Windows 7 RC using PC User Virtual Machine Shop 2 SE, get started with the new OS and more.

Advanced burning toolkit
Ashampoo Burning Studio
VALUED AT $64
Burning CDs, DVDs and Blu-ray discs just got easier with Ashampoo Burning Studio 2009 Advanced Magazine Edition.

Free security suite
INTERNET Security
VALUED AT $69   **FULL 12-MONTH LICENCE**
The latest version of PC Tools Internet Security 2009 includes antivirus, firewall, 12 months of free updates and more.

Windows Vista
Vista Service Pack 2

Save yourself a big download — we've got the latest major update for Windows Vista plus Internet Explorer 8 here.

NOTE • With the inclusion of Windows 7 RC, setup instructions for this month's cover DVD are different from usual. See the back cover of this DVD for details. • Windows 7 RC will expire on June 1, 2010, and bi-hourly shutdowns will begin in March 2010. • Ashampoo Burning Studio 2009 Advanced Magazine Edition does not include MPEG-2 encoding due to MPEG licensing restrictions. • Full versions may require online registration, which may be active for a limited time only. • Use of this DVD is subject to terms of use contained on this disc. • This DVD-ROM requires a computer DVD drive and includes third-party software whose system requirements vary significantly.

WINDOWS RESOURCE KIT:
Windows 7 Release Candidate (RC), PC User Virtual Machine Shop 2 SE, Windows Vista Service Pack 2, Internet Explorer 8

SOFTWARE:
FREE FULL VERSIONS
PC Tools Internet Security, Ashampoo Burning Studio 2009 Advanced Magazine Edition
APPLICATIONS
Foobar2000, FastStone Image Viewer, iDump
ONLINE TOOLS
Weather Watcher Live, YouTubeVac, Home Ftp Server, FreeProxy

SYSTEM UTILITIES
AppRemover, DS Clock, BestSync 2009, KeePass Password Safe

ENTERTAINMENT:
FREE GAME
Icy Tower

TUTORIALS:
EXCLUSIVE VIDEO GUIDES
Working with Clone, Heal & Patch tools in Photoshop, Handy tools & settings in Word 2007, PowerPoint interactivity with ActiveX and VBA, ASP form coding in Dreamweaver CS3, Installing Windows 7 RC onto a virtual machine

FULL SOFTWARE GUIDES
Get started with Ashampoo Burning Studio 2009 Advanced Magazine Edition

FEATURED TOOLS:
Word and PowerPoint macros of the month, PC User Virtual Machine Shop 2 SE

*** Unless indicated otherwise, the listed programs may be shareware or trial versions.**

The *PC User* cover disc has been tested using PC Tools Internet Security 2009 with the latest updates at the time of publishing.   **pctools**

Inside PC User

Your guide to *PC User*'s product reviews and editorial policies.

At *Australian PC User*, we pride ourselves in the quality and independence of our editorial. This is a commercial as well as an ethical policy, because we know that readers expect nothing less. *PC User* is Australia's top-selling technology magazine and our credibility is a key reason for our market leadership. To ensure we maintain our credibility, we insist on writers following strict editorial policies. There are several policies, but here are the most important:

✻ All reviews and comparisons must be scrupulously fair to every product and brand, but writers should never shy away from the truth. Above all, we must provide independent buying advice that readers can trust.

✻ Every product must be evaluated as thoroughly as possible, using a repeatable and transparent procedure that reflects real-world usage by readers.

✻ Every tip, tutorial and piece of advice must be thoroughly researched and tested by the writer.

_EXCLUSIVE BENCHMARKS

To achieve the second editorial policy above, we use objective, quantifiable benchmarks whenever possible. Unfortunately, we found existing benchmark software didn't go far enough for our aim of measuring real-world PC performance. So our hardware writer, Darren Yates, developed our own benchmark suite, UserBench, exclusively for *PC User*.

UserBench is Australia's only home-grown benchmark suite, and we reckon it's the world's best. It brings a level of realism and precision never seen before in PC benchmarks. All of the UserBench benchmarks are based on common, time-consuming tasks — video and image conversions and other tasks that tie up valuable PC time — as well as real games. They allow us to provide in-depth details including actual times, so you can see for yourself how long the system takes to accomplish these tasks. Here's a guide to each benchmark:

✻ **UserBench Encode 2009.** This benchmark combines audio and video encoding, converting a 12-minute stereo .wav file into five different audio formats: AAC, AC-3, OGG, WMA and MP3. It then encodes a 1,500-frame .avi file into five different video formats: MPEG-2, MPEG-1, WMV, H.264 and MPEG-4 ISO. Each conversion is timed and recorded in frames per second (fps) or megabytes per second (MB/s) as appropriate to produce an overall UserBench

How to read the benchmark results

For most benchmarks that measure performance over time (minutes and seconds), lower scores mean faster performance at that given task. The exception is UserBench Battery because you want a notebook's battery to last as long as possible. For benchmarks that measure frame rate (frames per second) or data transfer (kilobytes per second), higher scores are better. In particular, for gaming, you should look for at least 50fps on average, but preferably more (to allow for future games). In our new UserBench Encode benchmark, look for a Final Score that's as high as possible.

Encode 2009 score, based on a reference of 10 being a 2GHz Pentium 4 desktop PC with 1GB of memory running Windows XP SP2.

✻ **UserBench Image 2006.** This loads a 50MB .tiff file into Photoshop CS2, processes it 10 times using different filters, saving it as a .jpg file each time. It then completes the whole process three times. The final result is the fastest of the three runs in minutes and seconds.

✻ **UserBench Security VR 2007.** This scans 1GB of files using the antivirus tools NOD32 and AVG 7.5 Free Edition. It then uses WinRAR to compress the same files into an archive. It records the scan times and archiving time in minutes and seconds.

✻ **UserBench Crysis 2008.** *Crysis* is a demanding game with true DirectX 10 graphics and this benchmark automates the *Crysis* demo to provide unrivalled 3D games testing. It enables us to test at a multitude of resolution settings from 640 x 480 to 1,920 x 1,200 pixels. The final results for each test are provided in average fps.

✻ **UserBench UT3Demo 2008.** This automates the *Unreal Tournament III* demo to test DirectX 9/10 speed with an infinite number of tests per run at different resolutions from 640 x 480 to 1,920 x 1,200 pixels. Each test returns an average fps and charts for percentile fps bands.

✻ **UserBench Half-Life 2: Lost Coast 2008.** Our *Lost Coast* benchmark automates this *Half-Life 2* episode, testing DirectX 9 performance using infinite tests per run at various resolutions, with settings for antialiasing and anisotropy.

✻ **UserBench Battery 2008.** This new benchmark replaces VeriTest BatteryMark 4.01. It times the battery life of a notebook while constantly playing a WMV video clip in the background. The final result is recorded in hours and minutes.

✻ **Other benchmarks.** We still use third-party benchmarks where they are best of breed. These include HD Tach 3.0.4.0, which is used to test the data transfer rates of hard drives.

Get set for Windows 7

It's slick, snappy and giving Microsoft's competitors plenty of reasons to be concerned, says **Glenn Rees**.

'Tis the season for new operating systems with Microsoft soon to release Windows 7, Apple releasing Mac OS X 10.6 Snow Leopard, and Google announcing its own OS called Chrome. Who said the operating system was losing its importance? Oops, that would have been me, in my August 2008 editorial, when I speculated that online applications such as Google Docs were "slowly but surely devaluing the importance of desktop software, including the operating system".

However, judging by these latest events, the operating system looks to be more important than ever. In particular, Microsoft is banking on Windows 7 to give it some renewed momentum following the public relations disaster that was Vista. I still believe that after the initial teething problems of hardware incompatibilities and such, Vista became quite a good OS, but it never recovered from its early bad press, which was gleefully exaggerated by competitors and the anti-Microsoft contingent.

Thankfully, Windows 7 appears to be a different story. Even just the name indicates that Microsoft has taken a different approach to this OS. No more fancy 'experiences' or 'vistas', this is just the next version of Windows. As you'd expect, Windows 7 has had a makeover and has a number of new features. For example, the built-in search is much improved and networking is a whole lot easier, thanks to HomeGroups, a smart new feature for setting up small networks. The key aims for Windows 7 were speed, compatibility, stability and security, and since its beta release, we've found Windows 7 to be stable and snappier than Vista.

Don't just take our word for it. You can try the Windows 7 Release Candidate, which is on this month's cover DVD. But first, please make sure you carefully read our Windows 7 feature on page 54 and the installation instructions on the cover disc. Another option is to install Windows 7 RC in a virtual machine using our exclusive PC User Virtual Machine Shop 2 SE software,

as explained on page 62. If you're keen to buy a new PC now, but want to be able to upgrade to Windows 7, be sure to read our Windows 7 price guide on page 76. Of course, no new technology is perfect, and we'll review Windows 7 as soon as we receive the final release.

Meanwhile, Mac OS X 10.6 is due for release in September (see **http://tinyurl.com/573nex** for a rundown of its major improvements) and Google caught most industry commentators by surprise with the announcement of its Chrome operating system.

Perhaps it shouldn't have been that surprising, as Google certainly wasn't reluctant in launching its Chrome browser into a market that was already packed with competitive browsers. Google says the OS is the natural extension to the browser, as it will be initially targeted at netbooks and "people who spend most of their time on the web". In its official blog (**http://tinyurl.com/mkt6lv**), Google says: "Speed, simplicity and security are the key aspects of Google

Chrome OS. We're designing the OS to be fast and lightweight, to start up and get you onto the web in a few seconds."

It will be based on the Linux kernel, but with a new "windowing system" (interface). Google is clearly hoping to excite the developer community, as Chrome OS will be released as open source and its application platform will be simply the web — any app that runs in a web browser should run on Chrome OS. Google is working with a number of PC makers to bring Chrome-based netbooks to the market next year.

It sounds intriguing, but Google and its partners have a lot of work to do, such as developing device drivers for hardware compatibility. While I'm enthusiastic about the potential of online applications, the web as an application platform still has plenty of room for improvement. Only the foolhardy would underestimate Google, but I can't help thinking that the company might have been better off concentrating on improving Google Docs, its other online applications and its Gears technology for using web applications offline. And with Windows 7 being released in late October, Google will be facing a rejuvenated and fearsome competitor in Microsoft.

Windows 7 has several interface improvements, as explained by Rose Vines in her feature on page 54.

LG
Life's Good

DISCOVER THE UNDISCOVERED

SMART TECHNOLOGY THAT
COMFORTS YOUR EYES

The entertainment world today is wonderfully digital. The new LG W53 monitor moves beyond merely delivering you clear images and vivid video detail. The result is state-of-the-art engineering that features an exclusive Auto Bright system which automatically optimizes brightness and other picture settings based on the ambient light in the room and the content being viewed. Enjoy more. Enjoy longer. Your eyes will thank you.

W53   www.lge.com.au

Mac taskbar on Vista

Sender: GD / Internet

LETTER OF THE MONTH

Hey guys, I love the magazine. I really got into the 'DIY Windows 7' article (*PC User* August, page 40). I thought I'd share my preference in regard to the taskbar shuffle feature. I always liked the look of the Mac taskbar and found I was able to install a similar-looking taskbar on both Vista and XP. It's a program called RocketDock and it behaves in a similar way to the Mac taskbar.

Go to **http://rocketdock.com/download** and download the latest version (1.3.5 at the time of writing). After downloading, install it and that's it! You can drag any app into it, delete apps from it, position it anywhere on the screen and more. It runs extremely well, looks the goods and applications start very quickly. I have also found it to be bug-free.

The writer of the best letter to PC User *each month wins a prize. Just send your letter of no more than 300 words to* PC User *(see 'Contact us' on page 8), and please include your postal address and daytime telephone*

number. Entry is open to all residents of Australia other than employees of ACP Magazines. Entries for October close on August 14. The judges' decision is final. All entries become the property of ACP Magazines.
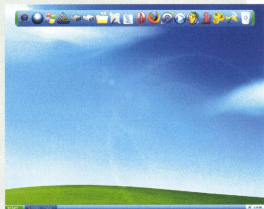
GIVE NETTOPS A CHANCE
Sender: Sean Bennett / Dongara, WA

I'm writing regarding the letter in your July edition titled 'Why bother with nettops?' (see page 8). David Kagan expresses his dissatisfaction with nettops and netbooks, stating that they are under-powered and "a waste of space".

As a professional who uses a multitude of programs, often requiring a lot of resources, I would agree with David that a nettop would not suit my needs. However, I do feel it needs to be pointed out that nettops do have their uses.

Immediate thoughts that come to mind readily are for the young — and not so young! — who are learning to use a computer for the first time. A nettop would be of great assistance for the elderly, to keep their minds active with basic usage, such as point-and-click applications, and for checking emails to help keep in touch with the outside world.

As netbooks are generally lightweight, easy to move and are normally cost-effective, it makes them relatively easy to use for the disabled in our community — often with only very slight modifications. They are also great for kids in the education environment, for travellers who want to keep in touch, and as a basic computer for business on the move.

Of course, netbooks and nettops also have
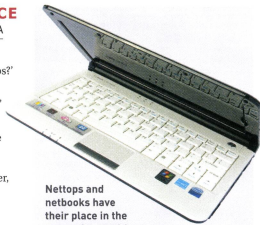
Nettops and netbooks have their place in the computing world.

their disadvantages. I would not consider recommending them for people using high-process applications (movie production or online gaming, for example) or using it as their main computer in the workforce, with their small screens and keyboards.

Overall, it all depends entirely on what you intend to use a computer for. This will ultimately determine whether a nettop or netbook will suffice, or if you need to go for a better-rated PC. I do, however, believe that there is a place for them in our electronic world, and that a nettop/netbook would provide an ideal solution to some users.

NETTOPS & NETBOOKS
Sender: Bernie / Internet

There has been criticism of the nettop reviews. I find them very useful and enjoy reading the reviews and comparing the UserBench scores with known computers. I can see that these machines (I would like to get a netbook) are in fact not up to scratch for many applications. I look forward to more reviews so I can choose the time to buy one, knowing that through your testing it will do what I want of it.

FAREWELL NETGUIDE
Sender: David Goodmanson / Internet

While I am sad to hear of the passing of *NetGuide*, as I was a regular monthly reader, it will be not so bad because a *NetGuide* section will be integrated into *PC User*. This has actually saved me money, as up until now I was buying *PC User* and *NetGuide* every month.

I really like Helen Bradley's articles — I'm an Access and Excel developer who always reads Helen's programming articles, so I'd love it if you could keep those up. I'm wondering if the *PC User* web site could have a database of reviews and test results — that would be handy.

One last thing in regard to test and review rankings. I'm not overly familiar with these —

sometimes 85% or 80% doesn't quite do it for me. I assume that nothing gets 100%, so 95% is the top deal and 90% isn't bad either. 50% means I wouldn't buy it with your money! I know there's that text accompanying the review, but I think there should be some kind of text that correlates to each one of these percentages. It would help in assessing your test results.

I really enjoy *PC User* each month and I also like the way the DVDs are presented. I would subscribe, except I worry whether the magazine and DVD might get scrunched in the letterbox by an over-exuberant postal worker.

THE END OF NETGUIDE
Sender: **Joel Shearman** / Waitara, NSW

I look forward to checking my mailbox every month for my copy of *PC User* to arrive. Not long ago, I also discovered *NetGuide* magazine and was a monthly buyer.

Turing to page 8 of *PC User* August, I had to read the text about *NetGuide*'s demise twice to make it sink in . . . Wow. It is extremely disappointing to see the end of a great read with plenty of tips, help and reviews packed into it.

But then I read on — there is some hope in the future, as *PC User* will continue its association with *NetGuide* and create a new section. Phew! Now my two favourite magazines will be twice as entertaining and in the one magazine, hopefully creating some extraordinary reading.

Let's hope we see the continuation of your work for years to come!

USB PLUGS
Sender: **Ian Smith** / Internet

I've been reading your magazine since 1998 and have learned heaps. In response to Robin McGrath's letter from the June issue ('Which way is up?', page 8), I had to totally agree that when you try to plug in a USB key, nine times out of 10 it will be up the wrong way.

Since writing this letter, I have made a discovery that seems to have been missed. If you have a close look at the computer end of your cables, you'll see the USB icon in the moulding. So that way is up when it's held horizontally. As for the back of the computer with ports hardwired to the motherboard,

Altech NRG Mini

Contrary to what was stated in the review on page 20 of the August edition, the Altech NRG Mini PC includes Windows Vista Home Premium 32-bit, BenQ E2200HD 21.5in widescreen LCD monitor and has an recommended retail price of $1,749. Apologies for any inconvenience.

MULTIPLE DISPLAYS IN WINDOWS 7
Sender: **David Pierson** / Internet

I really enjoyed reading the June issue of *PC User* magazine, providing over 175 expert secrets to readers. This encouraged me to contribute something to other readers as well.

Like many other users, I have a dual-monitor setup and there is no quick way to disable the secondary display when I want to fire up a game, and then re-enable it when I'm done. However, just recently, I stumbled upon a tweak in Windows 7 called Display Switch. This allows the user to switch between displays on their system by pressing Windows key-P. But an even faster way to switch displays is to integrate it into the menu when you right-click the desktop.

To do this, type regedit in the Run box on the Start menu and then do the following.

❶ Navigate to HKEY_CLASSES_ROOT\ DesktopBackground\Shell. Right-click and create a new key, naming it something like **Dual Display [1] + [2]**.
❷ Right-click the newly created Dual Display [1] + [2] key; select New —> Key and name it **command** .
❸ Click the command key, double-click on the **Default** string in the right pane and change the value to **displayswitch 3** . Click OK.
❹ Go back to HKEY_CLASSES_ROOT\ DesktopBackground\Shell and create another key named **Single Display [1]** . Perform steps 2 and 3, but instead of entering **displayswitch 3** , simply type **displayswitch 1** .
❺ Close the Registry Editor.

Now when you right-click on the desktop, you can easily switch from the dual display setup to a single display without hassle. This process can also be done if you're cloning a display or having a projector-only display. You just have to remember:
displayswitch 1 = single display
displayswitch 2 = duplicate display
displayswitch 3 = dual display
displayswitch 4 = projector-only display

up is also towards the top of the board when viewed horizontally. Since making this discovery, I can plug in my USB key the first time nine times out of 10.

GADGET USER
Sender: **Ziggy McFadyen** / Internet

Hi guys. I have been a *PC User* reader for many years, but as of the latest August issue, no more. Why? It is no longer a computer magazine and has turned into a gadget guide. What's with all the TV, digital camera, projector and mobile phone reviews? If I need to purchase any of these products, I can go and purchase the relevant magazine or visit the Choice web site. What's next? Fridges and microwaves? The name on the cover is *PC User*, not *Consumer Gadget User*. In future I will be reading genuine computer-related reviews on the web, not in *PC User*. Sorry guys, but enough is enough.

DIGITAL TV RECEPTION
Sender: **Alfred Jones** / Woodgate, Qld

About the letter in the August edition of *PC User* titled 'Buying the right TV' (see page 11). I live just a little further up the coast from Hervey Bay, roughly halfway between Hervey

Bay and Bundaberg. All these places and Maryborough receive the TV signal from Mount Goonaneman. Unfortunately, we are all about 70km or more from the transmitter, which means we're at the end of the line. As the digital signal drops very sharply towards the end of its coverage, we often get dropouts of both audio and video signals.

A few years ago, the Federal Government, under a scheme to improve TV signals in Australia, installed a repeater station at the northern end of Hervey Bay for UHF transmissions. Apparently, this transmission signal has a reasonably long yet narrow footprint, so only those living within the footprint get a good signal. My home is about 4km from this transmitter, but it's impossible to receive a signal from it as it's not beamed in my direction.

As Darren Yates said, it's very unusual to have UHF signals coming from a different location to the main transmission tower. I believe the Federal Government built quite a number of these repeater stations in many areas of Australia. If it wasn't for masthead boosters in this area, we would have a terrible signal.

I'm also very sorry to hear about *NetGuide* finishing, as I've been buying the magazine since 1998.

TEST BENCH ▶

HARDWARE / SOFTWARE / COMPONENTS

Speed king

The *PC User* team tests the latest hardware and software, including Apple's snappy new iPhone 3GS.

PC USER BEST BUY

90%

Voice Control

call
play
shuffle

Cancel

315° NW

APPLE iPHONE 3GS

PRICE 16GB, $879; 32GB, $1,040
CONTACT APPLE
PHONE 13 36 22
WEB www.apple.com/au

With newer touchscreen phone competitors nipping at its heels (HTC's Magic second-generation Android phone being a prime example — see page 111), Apple clearly had to do something with the iPhone 3G's successor to bring back a little sparkle. And while the jump isn't quite as big as many were hoping (where are our different colour options, Apple?), in general, the 3GS does exactly that. Admittedly, the 3GS is pretty light on the new features, and more than half of them are available to existing iPhone 3G owners by updating to the new OS 3.0. However, the 3GS does provide a noticeable upgrade from its predecessor. The quicker CPU (up from 412 to 600MHz) adds a lot to the phone's general usability: the interface is faster and smoother, apps and games load quicker and often run a little better, and web pages load faster, too. Over Wi-Fi there was an obvious difference between the 3G and 3GS when rendering web pages, although on a mobile 3G network the loading speed is still a slave to network latency. The upgraded camera — from 2 to 3 megapixels (MP) — is still a little behind the market leaders, though. On the other hand, the 3MP camera also adds 30fps video recording, and we were impressed by the smoothness of its video recordings, the built-in basic editing facilities and the ability to upload directly to YouTube, even over a 3G network. The voice dialling and music control feature works reasonably well, generally calling the correct contacts (even from their nicknames) without any training. Battery life is also pretty solid this time around, but heavy users will still struggle to get multiple days of use from it; we routinely got six to eight hours of screen time out of it before it required charging (every one or two days, depending on how heavily we used it). Its battery drain in standby is reasonably low at about 25% per day with 3G on and email fetched once per hour. In general, the 3GS is a noticeably better phone once you start using it. Current iPhone 3G owners still in contract may have trouble justifying the upgrade, but for anyone else considering a high-end, do-all phone, this is still the one to get.

— Dan Gardiner
PC User says: The new features work well and the faster CPU enhances usability.

_UP & COMING

Core i7 goes mainstream

Intel's Core i7 processors easily rule the desktop PC performance roost at the moment. The only problem is price — it's definitely a premium product. However, the performance market is soon due for a shake-up, with Intel about to launch a range of processors based on the same i7 architecture, using a new LGA-1156 socket (initially with the upcoming P55 chipset). These chips, coming under the Core i7, i5 and i3 monikers, will replace the Core 2 line as Intel's mainstream platform, so they should be relatively affordable. One feature we're interested in is the 'turbo' mode in the new i7 and i5. When utilising only one or two cores, these quad-core chips will be able to scale up their clock speeds significantly. For example, a 2.93GHz quad-core i7 using only one thread will reportedly speed up to 3.66GHz. This is a potentially killer feature for Intel, which means AMD could be on the back foot once again.

DELL STUDIO ONE 19

PRICE $1,999 / **CONTACT** DELL / **PHONE** 1800 812 393 / **WEB** www.dell.com.au

On page 16 of this issue, we look at MSI's Wind Top AE1900 nettop — a low-cost all-in-one touchscreen PC that we unfortunately have some reservations about. Namely, between its underpowered Atom-based specs and attendant use of Windows XP, its touchscreen interface is comparatively sluggish and rudimentary. XP just doesn't, and won't ever have, full-featured touch support. This far more capable (and expensive) all-in-one from Dell makes a better case for the emerging technology. Sporting an 18.5in (16:9 aspect ratio) 1,366 x 768 screen, 2.93GHz Core 2 Duo E7500 processor, Nvidia GeForce 9200 integrated graphics and 4GB of 800MHz DDR2 RAM, it's not quite a supercomputer (and for the same price, it's possible to build a Core i7 system), but it can comfortably run Vista and the upcoming Windows 7. And therein lies the rub: both of these operating systems feature some degree of touch support — Vista has tablet functionality that lends itself to touchscreens, while Windows 7

promises comprehensive multi-touch support. The Studio One 19's Touch-Zone suite is largely gimmicky, but this is attributable to the nascent state of PC touchscreen applications. Importantly, what's here is responsive and promisingly intuitive. This machine isn't great value, with a 500GB hard drive, slot-loading DVD burner, wireless keyboard and mouse, 1.3MP webcam, 802.11b/g Wi-Fi and Fast Ethernet, the components don't add up to much for a PC this price. However, if you're interested in seeing how PC touch interfaces evolve, at least the Studio One 19 offers room for future advances.

— Dominik Krupinski

PC User says: It's too expensive, but it's a viable platform for watching touchscreen software evolve.
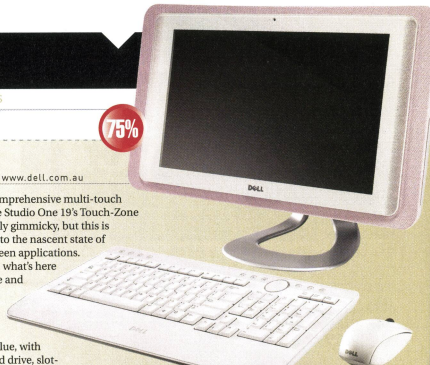
TEST RESULTS

	Dell Studio One 19
UserBench Encode 2009 (overall score)	41.23
– Audio time/rate (min:sec/MB/s)	1:34/6.86
– Video time/rate (min:sec/fps)	1:12/103.15
UserBench Image 2006 (min:sec)	2:30
UserBench Security VR 2007 (min:sec)	DNB
UserBench HL2:LC (640 x 480) fps	42.6

For UserBench tests with time-based scores, lower is better; for tests with MB/s and fps scores, higher is better. DNB – did not benchmark.

LENOVO THINKPAD W700DS

PRICE $9,500 / **CONTACT** LENOVO
PHONE 1300 557 073 / **WEB** www.lenovo.com.au

About 12 years ago, we saw the first 14in notebook, which sold for around $10,000 at the time. We haven't seen a notebook as expensive as that since this unit turned up. The W700ds is a dual-screen, quad-core, RAID hard drive, Blu-ray burning monstrosity that weighs just a breath under 5kg. Intel's Core 2 Extreme Q9300 processor turned in the highest UserBench Encode score we've seen for a notebook. Our test unit came with 400GB of RAIDed storage and a Blu-ray burner. Some of the weight is due to the huge 7,800mAh battery, which managed exactly 2 hours on testing. The big selling point here is the dual-screen display, although we'd actually call it 'a second and a bit'. You get a standard 17in 1,920 x 1,200-pixel panel plus a second slide-out 720 x 1,280 screen, which is about 40% the width of the main display. However, the second screen is a lower-grade panel with poorer image quality. They're both driven by Nvidia's Quadro FX 3700M graphics chip, which can also handle 3D gaming. It also has a touchpen tablet built into the keyboard rest. So while this is one seriously high-end machine, it's horrendously expensive and in our view, the small second screen is barely

worth the effort. This may be useful for some very niche applications, but the asking price is hard to take, even with all the fancy bells and whistles.

— Darren Yates

PC User says: Big, fast and loaded with features but that second screen isn't worth the effort, and definitely not at this price.

TEST RESULTS

	Lenovo ThinkPad W700ds
UserBench Encode 2009 (overall score)	43.85
– Audio encoding time/rate (min:sec/MB/s)	1:44/6.22
– Video encoding time/rate (min:sec/fps)	0:53/141.49
UserBench Image 2006 (min:sec)	2:48
UserBench HL2:LC (640 x 480) average fps	115.9
UserBench Battery 2008 (hours:min)	2:00

Except for UserBench Battery, for UserBench tests with time-based scores, lower is better; for tests with MB/s and fps scores, higher is better.

BELKIN CONSERVE AV

PRICE $170 / **CONTACT** BELKIN / **PHONE** 1800 235 546 / **WEB** www.belkin.com/au

While surge protectors (SPs) are capable of absorbing some low-level surges, no SP will protect your equipment from something as big as a lightning strike. With many SPs, what you're really buying is insurance. In the case of this Conserve AV, Belkin warranties any properly connected equipment up to a maximum value of $250,000. They'll also pay for Seagate to attempt data recovery on damaged hard drives. So far, so good. What it also adds is power saving. Of the eight power outlets on the board, six can be turned off via an included wireless remote. In the case of this AV variant, which includes pass-throughs for coaxial cables, that might mean turning off power to a connected TV, game console and stereo on your way out of the house, while leaving a PVR powered up. Most electronic devices chew through power even when switched off, especially large TVs, so we think this device definitely has merit. The remote has a good range (we tested it up to 15m and it didn't skip a beat), and while you're unlikely to recoup the $170 purchase price on energy savings alone, together with the insurance offered it's potentially a worthwhile investment. There's also a PC-oriented version available, with telephone instead of coaxial pass-throughs.
— Dominik Krupinski
PC User says: Pricey, but could be good for peace of mind and energy savings.

80%
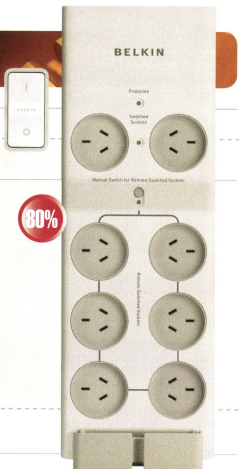
NETCOMM NP201AV 200MBPS AV HOMEPLUG

PRICE $210 / **CONTACT** NETCOMM / **PHONE** (02) 9424 2070 / **WEB** www.netcomm.com.au

NetComm's had 200Mbps-capable Ethernet over Power (EoP) HomePlug products for some time now, which essentially allow you to use your home's power lines as network cables, so we were surprised to see a new range with the same speed. What has been upgraded here is the design, from chunky power bricks to smaller, sideways-mounted plugs. They're not as slick as the Belkin Powerline products we've reviewed (*PC User* August, page 15), which could take either a plug or cable to get power, but they're at least easier to place sideways into a double socket without blocking both points. The other new addition is automatic secure pairing via a button on each adapter, and by default, they're pre-paired to one another. While NetComm hasn't raised the bar in speed claims, they performed where it really counts, with an average sustained transfer rate of 52.8Mbps — quicker than any EoP devices we've tested to date. It's still well underneath the hype, but if you want the fastest real-world EoP adapters, these are the ones to buy.
— Alex Kidman
PC User says: The speediest EoP adapters we've seen so far.

85%

RICOH CX1

PRICE $550 / **CONTACT** RICOH / **PHONE** 1300 363 741
WEB www.ricoh.com.au

Ricoh's latest compact digital camera is big and almost boxy in its overall design, with fairly simple stuff controls on the top and back, along with a 3in LCD. However, and there's some clever stuff going on internally. Its 9.29MP sensor might not seem that interesting, but the fact that Ricoh has opted for a CMOS sensor rather than the standard CCD sensor makes for generally crisp and clear pictures. Ricoh also sells the unit on the strength of the 7.1x optical zoom, which is hefty for a camera of this size. Finally, the CX1 offers a dynamic range shooting mode, which takes two shots at different exposures and automatically stitches them together in-camera for the best possible colour and highlight fidelity. It works, but you can't use it on moving targets. Like most compacts, shooting is quite simple, and those who live for minute levels of tweaking might find it a touch annoying. Noise becomes an issue at higher ISO settings, but that aside, the CX1 has a lot going for it.
— Alex Kidman
PC User says: Ordinary external looks hide a highly competent camera.

85%

MSI WIND TOP AE1900

PRICE $950 / **CONTACT** MSI
PHONE (02) 9748 0070
WEB http://au.msi.com

It's easy to get excited about touch-enabled all-in-ones like the Wind Top AE1900. Imagine the intuitive multi-touch gestures of Apple's iPhone interface on a larger scale. What a great living room PC that would make! Imagine the nerve of Wacom, charging $1,700 for a 12in graphics tablet/screen when you can get a 19in touchscreen computer like this for less than a grand! Unfortunately, once you take these cheaper touchscreen all-in-ones for a spin, you're likely to be disappointed. The Wind Top AE1900 is standard nettop fare, bundled with rudimentary touchscreen capabilities. We're not huge fans of Atom-based nettops. The budget processor's battery life advantages don't count for much in a desktop environment, and while it makes for a cheap system, you really do get what you pay for. In this case, that's a 1.60GHz N230 Atom processor, 1,366 x 768 screen, 1GB of RAM, a DVD burner, 1.3MP webcam, 801.11n wireless networking and a 'single-touch' interface that sits on top of Windows XP, which can (somewhat sluggishly) launch applications that often then need mouse/keyboard input. As you'd expect, its performance wasn't great: 8.13 isn't a stellar UserBench Encode score, and the system's paltry specs leave games

(and image editing for that matter) out of the question. On the plus side, it's cheaper than its ASUS EEE Top 1602 rival (*PC User* June, page 12), and has a larger screen, but we wouldn't really recommend either.
— Dominik Krupinski

PC User says: *An exciting idea that needs better hardware to take off.*

TEST RESULTS

	MSI Wind Top AE1900	ASUS Eee Top 1602	Altech SysEuropa-G3G*
Price	$950	$1,100	$750 (no screen)
UserBench Encode 2009 (overall score)	8.13	7.23	40.41
– Audio time/rate (min:sec/MB/s)	8:21/1.3	9:12/1.17	1:37/6.67
– Video time/rate (min:sec/fps)	5:48/21.51	6:42/18.61	1:13/102.29
UserBench Image 2006 (min:sec)	8:54	8:38	2:27
UserBench Security VR 2007 (min:sec)	8:57	9:30	3:28

For UserBench tests with time-based scores, lower is better; for tests with MB/s and fps scores, higher is better.
* Full-size desktop PC included for comparison. See *PC User* May (page 13) for full review.

XARA XTREME PRO

PRICE US$249 / **WEB** www.xara.com

Xara is an illustration program, and previous versions have won our Best Buy award due to their ease of use and comparatively low price. What's new in this Pro edition is that you can create simple Flash animations. This will make the process a lot easier for designers to create simple banner ads or splash pages. There's no scripting or video support, though. Multipage documents are also now possible, with improved text handling and all the core things you would want in a desktop publishing tool. It's not about to supplant Adobe InDesign (or even Quark), but for simple things like newsletters and brochures, it's ideal, and gives CorelDRAW a run for its money in this area. There are excellent raster/paint program features through its integrated Picture Editor, which may make Photoshop redundant for many people. Raster features in a vector tool like this are nothing new,

but Xara Xtreme Pro handles this integration well, with full feathering, shadows, masking and opacity control, and super-fast live editing of bitmapped images. And for those who still need to use Photoshop, you can import and export .psd files, complete with layers. For print professionals there's now full PDF support, CMYK colour separations, Pantone Spot and more. As always, Xara is also extremely fast compared to its bigger rivals, the file sizes much smaller, and it's simply more fun and more productive to work in.
— Philip Moore

PC User says: *A fast, fun and very affordable designer's tool.*
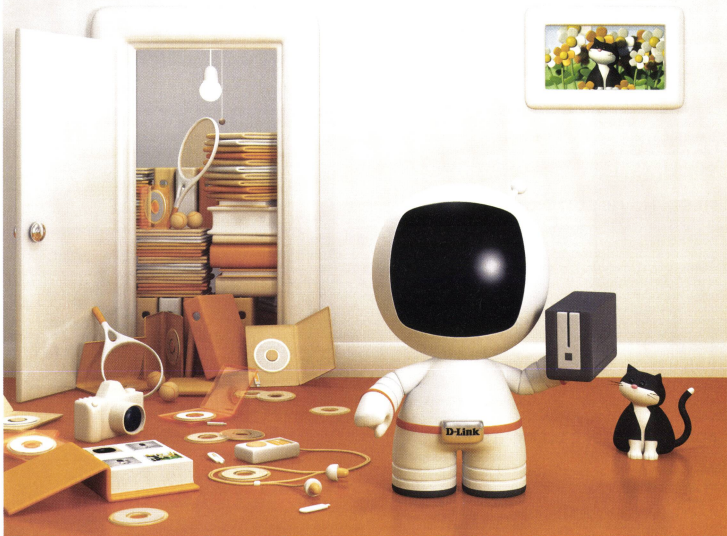
PC USER BEST BUY

DIY movie making

Philip Moore tests the latest consumer video editing programs to uncover the best-value suites.

There's a glut of video editing software out there, which can make it quite confusing for first-time buyers trying to pick one. Even leaving aside the more professional tools, there are still plenty of consumer video programs to choose from. Most aim to simplify the process of capture, editing and output with wizards and templates. This makes

things easier for the average person editing their home movies, but it can impose limitations a more serious user may find frustrating. Finding the balance between ease of use and functionality is the key. It's worth noting that we sadly haven't yet found any freeware or shareware video tools worth using.

MAGIX MOVIE EDIT PRO 15 PLUS

PRICE $169.95 / **CONTACT** QV SOFTWARE / **PHONE** (02) 9748 2555 / **WEB** www.magix.com

Previously only available online, Movie Edit has recently become available at retail stores. Unlike other programs in this price range, Magix offers up to 99 tracks for video editing, which should be more than enough for most people. It also has simple multicam editing (two cameras), AVCHD camera support and you can add Dolby surround sound capabilities for an extra fee. Also included are several high-end

features like colour correction and batch conversion. It doesn't use a step-by-step interface, but it does have MovieShow Maker to automatically edit footage to a chosen theme, as well as YouTube support and the ability to output to a range of portable devices. Magix has even bundle in a neat travel route animation tool and iClone 3 SE, a seriously good 3D animation program. There are excellent audio and

video effects provided, plus title animations and basic DVD authoring (including Blu-ray) are built in. This is an excellent tool for the price, and features things none of the other programs in this range cover. Download the demo to check it out.
PC User says: A great video editor at a great price.

ADOBE PREMIERE ELEMENTS 7

PRICE $150 / **CONTACT** ADOBE / **PHONE** 1800 614 863 / **WEB** www.pacific.adobe.com

Premiere Elements breaks up the editing process into four stages: Organize for capture and file import; Edit, including filters, titles, transitions and themes; 'Disc Menus' for DVD preparation, with several great templates to choose from; and Share for disc or file creation, web upload and output to mobile devices or back to tape. As a video editor, Elements

covers all the basics just fine, though there are some limitations with audio mixing. You can create instant soundtracks with the SmartSound library, or instant edits using themes that automatically apply titles, transitions, audio and overlays to your footage. It supports a good range of cameras, including HDV and

AVCHD models. While Elements may lack some features found in rivals tools, it makes up for it with some excellent templates and easy workflow. Overall, it's an excellent program of its kind and good value.
PC User says: A good mix of features and ease of use.

PINNACLE STUDIO 12

PRICE STANDARD, $85; PLUS, $150; ULTIMATE, $210 / **CONTACT** LAKO PACIFIC
PHONE 1800 657 601 / **WEB** www.pinnaclesys.com

Pinnacle Studio is a good all-rounder, with wizards and shortcuts for adding a musical soundtrack or creating a quick moving slideshow or music video. Picture-in-picture (PinP) and chroma key effects are possible, and a greenscreen cloth is provided in Ultimate. Pinnacle Montage lets you composite

multiple clips or graphics and treat them as a single unit, not unlike the timeline embedding feature of some pro editors. DVD authoring is built in, with basic Blu-ray support. The Ultimate edition adds some impressive plug-ins: Magic Bullet Looks for easy colour grading; Boris Graffiti for advanced text and titling; and

proDAD VitaScene for additional transition effects. This kind of power is unheard of in a consumer program. Despite a few quibbles with DVD and audio it's the most powerful consumer video tool around.
PC User says: A good all-round video editor.
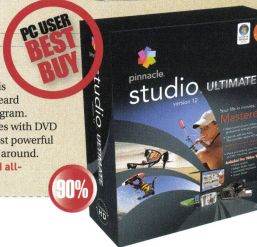
COREL VIDEOSTUDIO X2

PRICE STANDARD, $90; PRO, $150; PRO ULTIMATE, $210 / **CONTACT** COREL
PHONE (02) 8006 0112 / **WEB** www.corel.com.au

VideoStudio does everything from capturing and editing your video to creating a DVD with menus. You can burn HD video to Blu-ray or standard DVD discs, and it supports the BDMV format for camcorders that use Blu-ray media. Video can be edited in lower resolution using Smart Proxy and rendered in HD at the time. There are three versions of the

end. The program has a step-by-step wizard, making the process as easy as possible, and with this release the interface has received a much-needed overhaul, giving it more power, more tracks and a very cool paint module for rotoscope-style drawing directly onto the video as an overlay. There are three versions of the

program, with the Ultimate edition bundling several great companion tools like WinDVD 9, DVD Copy 6 Plus and the excellent Steinberg WaveLab LE 6 WAV editor.
PC User says: With some unique features and a welcome overhaul, VideoStudio is once again a serious contender.
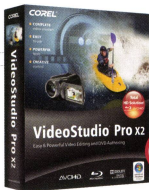
85%

CYBERLINK POWERDIRECTOR 7

PRICE DELUXE, $115; ULTRA, $210 / **CONTACT** LAKO PACIFIC / **PHONE** 1800 657 601 / **WEB** www.cyberlink.com

PowerDirector sports the tried and true method of wizard menus for tasks, with a choice of Capture, Edit, Produce and 'Create Disc'. There's support for HDV cameras, TV tuners and webcams, with AVCHD and Blu-ray disc support exclusive to the Ultra edition. The Magic Movie Wizard and Magic Music help to

automatically create a finished project from your clips, while Magic Fix and Magic Clean fix up shaky or grainy shots and remove red-eye, and there are other clever filters too. Finished projects can be output for web streaming, recorded back to camera, or made into a DVD complete with menus and

chapters. The downsides are that you're limited to two audio tracks and there are other editing limitations some might find frustrating. For the average user, however, PowerDirector is a good all-rounder with some excellent wizards.
PC User says: A good all-rounder with some neat filters.

85%

SONY VEGAS MOVIE STUDIO 9

PRICE STANDARD, $95; PLATINUM, $160; PLATINUM PRO, $235 / **CONTACT** NEW MAGIC
PHONE (03) 9722 9700 / **WEB** www.newmagic.com.au

Like its professional sibling, Vegas Movie Studio offers excellent audio features and an intuitive timeline. It doesn't use a step-by-step approach, though there is a Make Movie wizard to help during the final step of outputting your movie. YouTube upload is integrated and it supports a good range of modern cameras like HDV and AVCHD (especially Sony brands, of

course). Unlike most other programs reviewed here DVD authoring isn't built in; instead, this comes as a separate application, DVD Architect Studio 4.5. Also bundled is Cinescore Studio for creating instant royalty-free musical soundtracks. In the Platinum edition, Sound Forge Audio Studio 9 is included for WAV audio editing and there's good

Blu-ray support, except DVD Architect sadly doesn't offer Blu-ray disc creation, which rather defeats the purpose. Vegas Movie Studio is a mix of outstanding features and some that don't quite cut it. Still, it's definitely worth checking out.
PC User says: Perhaps the most intuitive of all and best at sound editing, but there are some annoying oversights. 😊

85%

Free video editing tools

APPLE iMOVIE '09

PRICE FREE WITH NEW APPLE MAC COMPUTER; $129 WITH APPLE iLIFE '09 / **CONTACT** APPLE
PHONE 13 36 22 / **WEB** www.apple.com.au

iMovie '09 is only available on the Mac as part of the latest iLife suite. iMovie is powerful and easy to use, and offers two things many consumer tools neglect: frame-accurate editing and independent video and audio editing. Another advanced feature is image stabilisation to help shaky handheld shots. For those who want more instant gratification, dynamic themes add instant windows and transitions based on a thematic style. You can then save your movie using iDVD, where you can create instant menus, still image slideshows and burn to disc. There's no Blu-ray support, though.
PC User says: The best potentially free editor, but only on the Mac.

90%

MICROSOFT WINDOWS MOVIE MAKER 2.1 & 2.6

PRICE FREE WITH WINDOWS XP OR VISTA / **WEB** www.microsoft.com

Movie Maker is the best free option for Windows users. It can be downloaded from the Microsoft site and version 2.1 comes as part of Service Pack 2 for XP Vista users should have 2.6 pre-installed. While it isn't a patch on the programs here, it does get the basics done and incorporates DV capture, two audio tracks, a video overlay for titles, simple transitions and effects, and output to file, web or DV camera. DVD authoring isn't included here and more advanced features like chroma keying or PinP aren't possible, but it can serve as a decent introduction to the process. The only significant difference between the two versions is that 2.6 adds HDV camera support.
PC User says: A basic yet serviceable video editing program.

70%

GTX 295 gets updated

Dominik Krupinski tests the latest graphics cards and motherboards, including Nvidia's newly revised flagship GeForce GTX 295.

LEADTEK WINFAST GTX 295 V2

PRICE $750 / **CONTACT** RECTRON / **PHONE** (03) 8545 2833 / **WEB** www.leadtek.com

With Windows 7 and DirectX 11 just around the corner, we're hard pressed to recommend high-end DirectX 10 GPUs like Nvidia's GeForce GTX 295. $750 is a lot to pay for a GPU, so we'd wait and see what Nvidia and ATI release in Q4. However, if you must have the fastest, priciest GPU that's currently available, the WinFast

GTX 295 V2 isn't the worst choice. Previous GTX 295s housed two GPUs on separate circuit boards. This revised design is more elegant: it's two GPUs on one circuit board, meaning less weight and heat. Older GTX 295s weigh in at 1.2kg and can heat up to 86°C under load, whereas this new model is a comparatively

svelte 980g and tops out at 70°C. That's nothing to sneeze at, and scoring 37 frames per second (fps) in Crysis at very high detail at 1,900 x 1,200 resolution is up there with the fastest we've seen. Still, that price is a mighty big ask.
PC User says: Fast, but we'd wait for DirectX 11 cards.

65%

MSI N275GTX TWIN FROZR

PRICE $410 / **CONTACT** MSI / **PHONE** (02) 9748 0070 / **WEB** http://au.msi.com

We reckon the GeForce GTX 275 is the best-value high-end GPU on the market, offering as much speed as most gamers need. This version, with a 33MHz (or 5%) core overclock to 666MHz, is no exception, but its main selling point is its proprietary twin-fan cooler. Compared to a standard

GTX 275, which gets up to 44°C and 88°C at idle and load, respectively, this card is impressively cool. We measured a temperature range of 38°C to 74°C, an excellent improvement, indicating good overclocking potential and card life. That said, unlike Nvidia's reference GTX

275s, this card expels heat into (rather than out the back of) its host case. This means adequate case ventilation is a must to avoid heating up other internal PC components.
PC User says: A tad pricey and its cooling solution requires good case airflow.

75%

GRAPHICS CARDS: HOW THEY COMPARE

Graphics card	Tested this month		Previously tested (for reference)	
	MSI N275GTX Twin Frozr	Leadtek WinFast GTX295 V2	Gigabyte GV-N275UD-896H	ASUS ENGTX295/2DI/1792MD3/A
GPU	Nvidia Geforce GTX 275	Nvidia Geforce GTX 295	Nvidia Geforce GTX 275	Nvidia Geforce GTX 295
Core/memory clock (MHz)	666/1,161	576/1,008	633/1,200	576/1,000
Memory	896MB GDDR3	1,792MB GDDR3	896MB GDDR3	1,792MB GDDR3
Stream processors	240	480	240	480
Driver software version	ForceWare 185.85	Forceware 186.16	ForceWare 182.50	Forceware 181.22
Power connectors	2 x 6-pin	1 x 6-pin, 1 x 8-pin	2 x 6-pin	1 x 6-pin, 1 x 8-pin
System power usage (idle/peak)	101W/280W	128W/343W	107W/261W	138W/366W
TEST RESULTS				
UserBench Crysis 2008				
- 1,024 x 768 (avg. fps)*	60.6/45.1	55.8/46.5	63.5/42.9	55.8/48.6
- 1,680 x 1,050 (avg. fps)*	46.7/28.9	50.4/40.4	45.6/28	53/41.8
- 1,920 x 1,200 (avg. fps)*	41.2/23.6	49.7/37.1	40.9/22.7	52/37.4
UserBench UT3Demo 2008				
- 1,024 x 768 (avg. fps)	152.1	140.3	161.3	151.8
- 1,680 x 1,050 (avg. fps)	142.5	137.6	153	152
- 1,920 x 1,200 (avg. fps)	147	137.3	157.6	151
UserBench HL2:LC 2008				
- 1,024 x 768 (avg. fps)	134.5	127.5	134.2	131
- 1,680 x 1,050 (avg. fps)	131.1	136.4	141.5	125
- 1,920 x 1,200 (avg. fps)	132	133.4	139.8	128
Idle/load temperatures (°C)	38/74	44/70	44/83	48/86

*High/very high details.

MSI 790FX-GD70

PRICE $299 / **CONTACT** MSI / **PHONE** (02) 9748 0070 / **WEB** http://au.msi.com

85%

Currently, decent AMD AM3 motherboards all seem to be selling for around $300. Generally speaking, most boards at this price point will fit one of two categories: a feature-packed board with heaps of SATA ports, dual Gigabit Ethernet, CrossFire and other assorted sundries; or alternatively, a board with less features but marginally higher overclocking potential. This MSI board definitely opts for the feature-rich route. It features eight RAID-ready SATA ports (plus one eSATA), support for up to 16GB of 2,133MHz DDR3 memory, four-way CrossFire, as well as a BIOS packed with tweaking options. On top of this, you also get a built-in overclocking knob. Sitting at the bottom of the motherboard, this twiddler allows you to adjust bus speeds in BIOS-defined increments. While this may seem gimmicky, it actually does come into its own when finetuning clock speeds. In our tests, even with this functionality, it still came in slightly behind ASUS's M4N82 for overclocking, but compared to Gigabyte's similarly loaded GA-MA790FXT-UD5P it's a potentially compelling bonus. The only downsides are middling power management, which isn't as simple as other boards, and availability; we could only find one vendor listing this model online at the time of publication.
PC User says: This feature-packed AM3 board's a winner.

ASUS P5Q PRO TURBO

PRICE $240 / **CONTACT** ASUS / **PHONE** 1300 278 788 / **WEB** www.asus.com.au

80%

We named the P5Q PRO our value motherboard of the year in 2008. With a good range of features, power management, speed and rock-solid stability, it delivered a lot for a $200 P45-based board. This new Turbo version is overclock-oriented, its main draw being a couple of tricks to make desktop-level overclocking a simpler affair. Like the standard PRO, the Turbo has ASUS's EPU-6 and TurboV utilities, which provide power management and some overclocking/voltage controls from the desktop. What the Turbo adds is Turbo Key, which essentially retools a PC's power switch to bump up the megahertz. Assign a profile to it and with the touch of a button, voila: more speed. We can see some use to this (in-game overclocking, for instance), but like the rest of ASUS's desktop utilities, it's a bit gimmicky and doesn't offer near the level of control the board's BIOS does. To be fair, there are some other changes to the Turbo, such as onboard audio by VIA rather than Realtek, and the migration of one SATA port to the rear panel as eSATA. A copper MOSFET heatsink is also new, which may aid in overclocking, but given that the P5Q PRO is already a decent overclocker, we think you'd be hard pressed to see any benefit, and consequently, added value.
PC User says: Doesn't quite offer enough over the P5Q PRO.

MOTHERBOARDS: HOW THEY PERFORM

Motherboard	Tested this month		Previously tested (for reference)		
	ASUS P5Q PRO Turbo	MSI 790FX-GD70	ASUS P5Q PRO	ASUS M4N82 Deluxe	Gigabyte GA-MA790FXT-UD5P
TEST SYSTEM					
Processor	Intel Core 2 Duo E8500	AMD Phenom II X4 955	Intel Core 2 Duo E8500	AMD Phenom II X4 955	AMD Phenom II X4 955
Clock speed	3.16GHz	3.2GHz	3.16GHz	3.2GHz	3.2GHz
Memory	2GB DDR2-800	2GB DDR3-1066	2GB DDR2-800	2GB DDR3-1066	2GB DDR3-1066
Motherboard chipset	Intel P45	AMD 790FX	Intel P45	Nvidia nForce 980a SLI	AMD 790FX
Graphics card	GeForce GTX 285	GeForce GTX 285	GeForce GTX 285	GeForce GTX 285	GeForce GTX 285
Operating system	Windows Vista 32-bit SP1	Windows Vista 32-bit SP1	Windows Vista 32-bit SP1	Windows Vista 32-bit SP1	Windows Vista 32-bit SP1
TEST RESULTS					
UserBench Encode 2009 (overall score)	45.75	46.94	46.16	46.92	46.95
- Audio time/rate (min:sec/MB/s)	1:27/7.45	1:40/6.45	1:27/7.42	1:40/6.46	1:40/6.47
- Video time/rate (min:sec/fps)	1:03/117.89	0:46/161.86	1:01/121.16	0:46/161.03	0:46/161.13
UserBench Image 2006 (min:sec)	2:31	2:48	2:29	2:50	2:53
UserBench Security VR 2007 (min:sec)	2:07	2:36	2:14	2:44	2:19
Average power use at idle	93W	131W	97W	124W	110W
UserBench Crysis (High details)					
- 1,024 x 768 (avg. fps)	61.3	52.8	60.9	59.4	57.3
- 1,680 x 1,050 (avg. fps)	47.8	46	48.4	44.9	46.7
- 1,920 x 1,200 (avg. fps)	41.7	38.9	41.6	39.1	40.4
UserBench UT3 Demo 2008					
- 1,024 x 768 (avg. fps)	158.5	218.5	155.5	209.4	217
- 1,680 x 1,050 (avg. fps)	148.2	193.2	151.1	192.9	193.5
- 1,920 x 1,200 (avg. fps)	143.9	174.6	152.5	173.5	172.6

Quad-core head to head

Dominik Krupinski tests the latest Intel and AMD quad-core chips.

AMD PHENOM II X4 955 BLACK EDITION

PRICE $360 / **CONTACT** AMD
PHONE (02) 8877 7222 / **WEB** www.amd.com

PC User says: A worthy rival to Intel's fastest Core 2 Quads.

INTEL CORE 2 QUAD Q8400

PRICE $280 / **CONTACT** INTEL
PHONE 1300 363 018 / **WEB** www.intel.com

PC User says: Offers affordable video encoding grunt, but not as good for general use.

After testing AMD's impressive new dual-core Phenom II X2 550 processor last month (which offered speeds comparable to Intel's $280 Core 2 Duo E8500 when overclocked — an excellent showing from a $160 chip), this issue we've gone a little higher-end, testing two new quad-core processors; one from AMD and one from Intel.

We've been fairly critical of current-generation quad-core processors. Unless utilised for heavily multithreaded applications, their generally lower clock speeds (compared to dual-core chips) make for poorer general performance, as few games or mainstream apps make full use of multiple cores. Their higher prices don't win us over, either. However, in terms of speed at least, the Phenom II X4 955 is a bit of an improvement.

At its 3.2GHz stock speed, it still does well in single-threaded apps, being at least on par with Intel's E8500 across our tests, and it comes in significantly ahead in multithreaded tests (video encoding is substantially faster, as are *Unreal Tournament 3* frame rates). Being a Black Edition processor, it's also a snap to overclock by simply increasing the FSB/CPU ratio. We got ours to 3.7GHz with no trouble, netting a 13% gain in UserBench Encode speeds. Having said that, we found the bundled heatsink couldn't quite keep up with the temperatures generated, making an aftermarket cooler a necessity for overclocking. It's also worth noting that, at $360, it comes at a significant price premium to a fast dual-core processor; you really do need to be using multicore-optimised apps to make this a worthwhile buy.

Intel's new Q8400 is much more affordable at $280, but it involves more of a performance trade-off. Unlike the Phenom II, it has a relatively low clock speed of 2.66GHz, meaning its general-purpose and gaming scores aren't a match for similarly priced dual-cores.

Additionally, the Q8400 didn't display the same improvement in *Unreal Tournament 3* (a relatively multicore-friendly game) frame rates as AMD's quad-core processors. This may be due to its relatively low 4MB of L2 cache — less than the E8500's 6MB shared across only two cores, nor as elegant as AMD's L3 solution, now also seen in Intel's Core i7 range. Video encoding scores are still quite good, though, making this chip a good choice if you want to build a low-cost video editing PC.

However, we should note that the Q8400 is clearly intended as a competitor to AMD's 3GHz Phenom II X4 940, which is a bit faster, and may soon drop to match the Q8400's price.

INTEL & AMD PROCESSORS: HOW THEY COMPARE

MODEL	AMD Phenom II X4 940 Black Edition	AMD Phenom II X4 955 Black Edition	Intel Core 2 Quad Q8400		Intel Core 2 Duo E8500	
Street Price	$300	$360	$280		$280	
Clock Speed (GHz)	3	3.2	2.66	3.2 (overclocked)	3.16	3.8 (overclocked)
Frontside bus (MHz)	800	800	800	1,333	1,600	1,333	1,600
L2/L3 cache	2/6	2/6	2/6	4/0	4/0	6/0	6/0
Number of cores	4	4	4	4	4	2	2
TESTING SPECIFICATIONS						
Memory	2GB DDR3-1333	2GB DDR2-800	2GB DDR2-800	2GB DDR2-800	2GB DDR2-800	2GB DDR2-800	2GB DDR2-800
Motherboard	Gigabyte GA-MA790GP-DS4H	ASUS M4N82 (Deluxe)	ASUS M4N82 (Deluxe)	ASUS P5Q PRO	ASUS P5Q PRO	ASUS P5Q PRO	ASUS P5Q PRO
Graphics card	Nvidia GeForce GTX 285	Nvidia GeForce GTX 285	Nvidia GeForce GTX 285	Nvidia GeForce GTX 285	Nvidia GeForce GTX 285	Nvidia GeForce GTX 285	Nvidia GeForce GTX 285
TEST RESULTS						
UserBench Encode 2009	44.84	46.92	53.37	43.01	50.72	46.16	52.59
- Audio time/rate (min:sec/MB/s)	1:45/6.15	1:40/6.46	1:27/7.4	1:45/6.15	1:29/7.29	1:27/7.42	1:19/8.22
- Video time/rate (min:sec/fps)	0:48/155.64	0:46/161.03	0:41/180.48	0:54/136.72	0:46/159.87	1:01/121.16	0:52/143.86
UserBench Image 2006	2:42	2:50	2:31	2:49	2:28	2:29	2:14
UserBench Crysis 2008 (High)						
- 1,024 x 768 (avg. fps)	55.4	59.4	58.4	46.3	51.8	60.9	66.89
- 1,680 x 1,050 (avg. fps)	44	44.9	47.6	41.1	44.7	48.4	48.48
- 1,920 x 1,200 (avg. fps)	DNB	39.1	39.7	39.5	38.9	41.6	44.3
UserBench UT3 Demo 2008						
- 1,024 x 768 (avg. fps)	DNB	209.4	222.3	156	175	155.5	164.4
- 1,680 x 1,050 (avg. fps)	DNB	192.9	200.4	149.3	162.9	151.1	166.7
- 1,920 x 1,200 (avg. fps)	DNB	173.5	174.5	150.5	161.5	152.5	159.4

DNB - did not benchmark.

Big-value cameras

Darren Yates tests 11 of the latest ultra-zoom and digital SLR cameras.

You might think that digital camera development has gone about as far as it can, with many models now featuring ultra-zoom lenses and more megapixels (MP) than you can poke a stick at. However, you'd be wrong — these days, you're not serious unless your ultra-zoom camera has at least a 20x optical zoom lens. And if that's not enough, video capture is now starting to get serious, with 720p (1,280 x 720-pixel)

resolution and H.264 compression turning a number of the models we tested into dual-purpose still/video cameras.

Digital SLRs are starting to see some changes, too. One model we tested offers 720p video capture and another uses the new Micro Four Thirds lens system, giving SLR image quality in a smaller package. Change generally seems to be happening at a slower rate on digital SLRs, as only one of

four models we tested had captured video. That's a shame because while ultra-zoom cameras allow you to pull in the action from seemingly miles away, it's the digital SLRs that still have it for image quality, offering virtually noise-free, clear images.

We haven't tested every model on the market, but the 11 we've looked at here should give you a pretty decent guide of what's available at the moment.

How we tested

Each camera was set up to its automatic capture mode and maximum resolution. We then took test shots at both wide-angle and telephoto lens settings of our view heading west down Sydney's Goulburn St. Where possible, we also took video footage at the camera's maximum resolution settings. Here's what we checked for:

✳ **Barrel distortion.** This shows up the curvature of the lens at extreme wide-angle. The better lenses show less of this.

✳ **Chromatic aberration.** This fault shows up at the edges of extreme zoom (telephoto) shots on the edges of sharply contrasting objects, where one side will have a green hue and the other a purple hue. Good lenses won't exhibit this problem.

✳ **General lighting balance.** Our test location has tough lighting with many tall buildings, so it tests the camera's ability to balance the skyline with darker areas.

✳ **Video capture.** Where applicable, we captured a short amount of video to test the video and audio codecs, and to see if the video capture could use the optical zoom lens. Lower-quality cameras tend to only offer digital zoom on video capture.

These tests, along with the general features and price were all combined to give comparative scores out of 100.

_ULTRA-ZOOM CAMERAS

SAMSUNG WB550

PRICE $460 / **CONTACT** SAMSUNG / **PHONE** 1300 362 603 / **WEB** www.samsung.com.au

The only technical difference we can spot between this WB550 and the cheaper WB500 (see page 25) is the larger 12.2MP image sensor and HDMI output offered here. Virtually everywhere else, these two cameras are identical. Both cameras feature a very wide-angle 24mm lens, although the shots from the WB550 seemed to show more curvature than its sibling; that's not entirely unexpected, given how wide the lens is, but it's not great either. Video capture is 720p in MP4 format with H.264 compression, although it seems to have a slightly higher bit rate compared with the WB500, up around 9Mbps. There was some noise when capturing indoor video, but still, that H.264 compression ensures you at least get a decent amount of capture time from your camera. The extra resolution and video codec choice make both the WB500 and WB550 good video capture alternatives. You can also use the full 10x optical zoom in video capture.

The tricky thing is pricing — we've seen this camera online for as little as $400 and it typically goes for only about $15-$20 more than the WB500. Given the extra features, the price definitely makes the WB550 worth a look.

PC User says: HDMI output and large 12MP sensor — good if you can find it for $400.

Image quality

The most noticeable difference in image quality between digital SLR and ultra-zoom cameras is the amount of image noise. That's due to three main factors: JPEG compression, image sensor size and lens quality. JPEG compression gives a more geometric pattern in image noise, while a smaller sensor size means less photons of light hit the sensor. To get the image brightness right, the light levels have to be amplified more than they would on cameras with larger sensors. Amplifying the light also amplifies the noise, which appears as a random pattern, a bit like snow on your TV. Finally, lens quality plays a vital role in image quality. You can have all the megapixels in the world, but if the lens isn't up to scratch, the image quality will suffer.

RAW on Canon cameras

Canon PowerShot cameras don't usually have RAW image capture. However, on most models, RAW capture is possible via a firmware hack. For more details, check out CHDK (Canon Hack Development Kit), which shows how to attach this temporary firmware add-on to your camera. At the moment, supported cameras include the PowerShot SX10 IS, but not the SX200 IS. However, given the track record of the CHDK developers, it won't be long before the SX200 IS is added to the ever-growing list. We have to say at this point you're on your own as far as warranty goes if you use CHDK, although we've used it on a PowerShot S3 IS camera in the past without any problems. For more details, head to **http://chdk.wikia.com**.

CANON POWERSHOT SX10 IS

PRICE $580 / **CONTACT** CANON / **PHONE** 1800 021 167
WEB www.canon.com.au

There were a couple of disappointing features on this camera. First, Canon needs to improve its video capture option. The VGA (640 x 480) resolution is disappointing, especially since the capture format is now H.264/MOV (older PowerShot models used Motion JPG/AVI). Thankfully, this unit's full 20x optical zoom lens can also be used in video capture mode, something the Coolpix P90 can't do. As good as the zoom lens is, though, there's noticeable chromatic aberration at full zoom, and some barrel distortion at extreme wide-angle. That said, the extra pulling power of the zoom gives the impression of better image quality, especially for distant shots. One thing we didn't like was the low-resolution electronic viewfinder. Video capture happens at about 10Mbps and stereo mics on either side of the lens barrel give you decent 16-bit-equivalent sound. The one thing that extra zoom lens does is push up the weight. At 560g, this was easily the heaviest of the lot and got close to some of the digital SLRs.

PC User says: Big and heavy, but takes reasonably decent still shots.

NIKON COOLPIX P90

PRICE $740 / **CONTACT** NIKON / **PHONE** 1300 366 499 / **WEB** www.nikon.com.au

The Coolpix P90 is a decent digital still camera, but it's not a great choice if you're looking for something to capture movies on the side. The 12.1MP/24x optical zoom mechanism is one of the most potent we've seen, although it struggled a bit in difficult lighting situations. Our test shots were a little bland in colour and struggled in areas with poor or dark lighting, but the big zoom does help overcome compression noise, giving better results than smaller-zoom models. You only get JPEG compression (no RAW mode), but with macro mode focus down to 10mm and that 24x optical zoom lens, you should have no trouble getting a decent view of anything. In common with most of the big-zoom models, the P90 has ordinary video capture, with only 640 x 480-pixel resolution in Motion JPEG/AVI format. You also only get 4x digital zoom when capturing videos, which is a waste given the 24x optical zoom potential.

PC User says: Takes decent shots, but has poor video capture.

PANASONIC LUMIX DMC-TZ7

PRICE $640 / **CONTACT** PANASONIC / **PHONE** 13 26 00 / **WEB** www.panasonic.com.au

The new DMC-TZ7 is similar in design to the Canon SX200 IS and the Samsung WB series, featuring a 10MP image sensor and 12x optical zoom. However, it captures video in AVCHD Lite format, which allows 720p video to be burned to a DVD and played on a Blu-ray disc player. There's also software to burn video clips to DVD. And with the HDMI output, you can even connect the camera directly to your big-screen TV. It's the first time we've seen the AVCHD feature in a digital still camera. As for image quality, the test shots showed less image noise than other compact models and the lighting balance was better than the SX200 IS. That said, we'd still choose either the SX200 IS or Coolpix P90 for image quality. Given the features, we'd choose this one first, despite the Canon's higher-resolution image sensor.

PC User says: The first still camera we've seen that also thinks like a video camera.

SAMSUNG WB500

PRICE $440 / **CONTACT** SAMSUNG / **PHONE** 1300 362 603 / **WEB** www.samsung.com/au

This decent value camera packs a 10x optical zoom lens with a 10MP image sensor into a compact chassis, but what's most impressive is the capture quality. Our test images came out well lit in difficult conditions. Chromatic aberration was minor and barrel distortion was very good. There was a solarising of lights (such as car tail lights), which gave an almost fluorescent glow. The 720p video capture impressed us, able to capture to the limits of the SD card in efficient H.264 format, and although the audio is only low-bit rate mono WAV, that's typical of most digital still cameras. Despite being one of the best we've seen yet from Samsung, audio capture still needs improvement; however, shooting 720p H.264 video is no mean feat. One problem is the similar WB550 also offers HDMI output and more pixels for very little extra.

PC User says: Good overall, but had some minor exposure issues in our tests.

CANON POWERSHOT SX200 IS

PRICE $540 / **CONTACT** CANON / **PHONE** 1800 021 167 / **WEB** www.canon.com.au

The PowerShot SX200 IS almost comes in at the same price as the much bigger SX10 IS, but this model fits in the compact camera club. That said, it does something the SX10 IS can't do and that's capture 720p video. Video is captured in MOV format at 1,280 x 720 pixels using H.264 compression and it can run to the limits of your flash card. It's roughly the same size as the Samsung WB series and Panasonic DMC-TZ7, but the Panasonic (with its AVCHD Lite option) is superior in our view. The image quality was reasonable, although we thought our test images were slightly overexposed and looked a little pale. There was some chromatic aberration at maximum zoom and only minor amounts of barrel distortion. The worst of it was the JPEG compression noise, but that's nothing out of the ordinary. The real problem is this price: it's not $80 better than Samsung's WB550.
PC User says: The image quality wasn't great and it's too expensive.

OLYMPUS SP-590UZ

PRICE $720 / **CONTACT** OLYMPUS / **PHONE** 1300 659 678 / **WEB** www.olympus.com.au

The SP-590UZ takes out the award for the biggest zoom lens, combining a 26x optical zoom with a 12MP image sensor. However, despite the big numbers, it lacked finesse in a few areas. First, the camera didn't like the difficult lighting conditions looking west along Goulburn St, with the skyline forcing darker elements to be a bit too dark. The colours also weren't as vibrant as we expected and the image stabiliser struggled in lower light at maximum zoom, although that's probably to be expected with such a big zoom. Video capture was disappointing, with only VGA resolution and Motion JPEG compression into AVI format. The one saving grace was the fact that the optical zoom works with video capture. The four AA batteries are handy, but the reliance on slower, expensive xD-Picture Card is a pity — and all the more reason why space-hungry Motion JPEG video capture is a poor choice.
PC User says: Huge zoom lens, but had difficulty with our lighting conditions.

_DIGITAL SLR CAMERAS

NIKON D5000

PRICE $1,599 (SINGLE-LENS KIT) / **CONTACT** NIKON / **PHONE** 1300 366 499 / **WEB** www.nikon.com.au

The new D5000 is the only digital SLR camera we saw this month that's capable of capturing digital video, which it does at a creditable 720p (1,280 x 720 pixels). However, it captures in Motion JPEG format, so expect to see your flash storage get used up in a hurry. That said, it features an HDMI output, which is a bit of a surprise. For $1,599, you only get an 18-55mm VR lens, although it's a pretty decent wide-angle lens that shows little barrel distortion and no obvious chromatic aberration. The colour and lighting accuracy were certainly very good in our test shots. Add in the 2.7in flip-over LCD and Live Preview mode, and the D5000 makes it very easy to take high-quality images, even in the automatic modes. Nikon claims you'll get up to 510 shots per charge of the Lithium Ion (LiIon) battery, which like all of the units we tested, is a proprietary type that really requires you carry a second if you're on holidays.
PC User says: Not cheap, but takes decent stills and can capture 720p video.

CANON EOS 450D

PRICE $1,449 (TWIN-LENS KIT) / **CONTACT** CANON / **PHONE** 1800 021 167 / **WEB** www.canon.com.au

On the surface, the mid-range EOS 450D twin-lens kit looks to be good value for money, but on closer inspection, noticeable chromatic aberration is visible when using the 75-300mm lens at full zoom. The general lighting and colour of our test images was quite good, despite the difficult lighting conditions of our test location. The 450D body is remarkably light, yet still features a larger 3in LCD at the back. The inclusion of a Live Preview mode should appeal to less experienced users, although using the through-the-lens (TTL) viewfinder provides a better power-saving option. There's a built-in self-cleaning sensor system, so you just have to keep the lens clean. Having no video capture mode isn't a bad thing — better nothing at all than something half-baked. It was the only model we tested not to feature 3,200 ISO capture. Media support is SD and the 450D supports high-capacity SDHC cards. Overall, this is a good camera, but we wouldn't say the bundled lenses are straight from the top drawer.
PC User says: Good all round, with Live Preview and a self-cleaning sensor.

OLYMPUS E-620

PRICE $1,399 [TWIN-LENS KIT] / **CONTACT** OLYMPUS / **PHONE** 1300 659 678 / **WEB** www.olympus.com.au

The E-620 is the only digital SLR we saw to feature built-in image stabilisation, which is a neat trick, given how light the E-620 is at just 475g. That enables Olympus to deliver lightweight frames, typically a dual kit with 14-42mm and 40-150mm lenses as part of a bundle. You can use either the TTL viewfinder or the Live Preview mode through the 2.7in LCD. Olympus continues to support xD-Picture card, but thankfully you also get CF card support, which is a much better and cheaper alternative. As for image quality, the E-620 does a pretty decent job and the results from the 40-150mm lens were quite good. The only quality issue we noticed was a bit of extra noise in near-black areas of our test images. Chromatic aberration issues were just about non-existent and generally, the overall lighting balance was good. The LiIon battery is rated for up to 500 shots per charge, but if you're a heavy shooter, consider having a second one on hand. Olympus uses the smallest image sensor of the three we know about (Panasonic doesn't disclose

80%

the DMC-G1's sensor size), but on the whole, the E-620 does a reasonable job.

PC User says: No sensor cleaning, but it's a well-featured unit with decent lenses.

Film vs digital

Everyone has their own ideas on this and we've even read one or two reviews in the local mainstream press that claim "digital SLRs are now better than film". We certainly wouldn't go that far and recommend caution when making blanket claims like this. Technically, film is still superior to digital if you're talking about medium-format and larger-frame film options. But clearly, digital is more convenient for most people and cheaper when it comes to getting prints done because you only pay for the prints you want. The bottom line is that real image quality — regardless of the technology — comes down to the camera and the lenses used. You can get rubbish results from film cameras just as you can get great results from digital SLRs. Digital SLR cameras are the superior digital option, but we certainly wouldn't say they're better than film just yet.

PANASONIC LUMIX DMC-G1

PRICE $1,649 (SINGLE-LENS KIT) / **CONTACT** PANASONIC
PHONE 13 26 00 / **WEB** www.panasonic.com.au

The DMC-G1 breaks the mould for digital SLRs by incorporating a new Micro Four Thirds (MFT) smaller-than-normal lens mechanism. Panasonic claims there's no loss of image quality with this system, which is achieved by ditching the optical viewfinder and using an electronic one. Without a mirror box, the 'flange back' (the distance from the sensor to the lens-mounting plane) is much smaller so it maintains image quality and uses smaller lenses. The results are impressive, but you have to pay extra for it. It comes with a 28-90mm 35mm-equivalent lens and because it's an MFT lens, it's interchangeable with other MFT lenses, not just Panasonic's; however, there aren't many around at the moment. There's also no video capture — for that, you need to fork out for the $3,299 DMC-GH1, which includes 1080p video capture. There's a choice of electronic viewfinder or the 3in LCD on the back, and the DMC-G1 is the lightest of the four digital SLRs. You pay more for this technology at present, which makes it hard for most people to consider.

PC User says: Uses a simpler, smaller lens technique, but it comes at a price.

DIGITAL CAMERAS: HOW THEY COMPARE

Model	Ultra-zoom							Digital SLR			
	Canon PowerShot SX10 IS	Canon PowerShot SX200 IS	Nikon Coolpix P90	Olympus SP-590UZ	Panasonic Lumix DMC-TZ7	Samsung WB550	Samsung WB550	Canon EOS 450D	Nikon D5000	Olympus E-620	Panasonic Lumix DMC-G1
Price	$540	$540	$740	$720	$640	$440	$460	$1,449	$1,599	$1,399	$1,449
SPECIFICATIONS											
No. effective pixels (MP)	10	12.1	12.1	12	10.1	10	12.2	12.2	12.3	12.3	12.1
Optical zoom/digital zoom	20x/4x	12x/4x	24x4x	26x/5x	12x/4x	10x/5x	10x/5x	N/A/N/A	N/A/N/A	N/A/N/A	N/A/N/A
Maximum image resolution (pixels)	3,648 x 2,736	4,000 x 3,000	4,000 x 3,000	3,968 x 2,976	3,648 x 2,736	3,648 x 2,736	4,000 x 3,000	4,272 x 2,848	4,288 x 2,848	4,032 x 3,024	4,000 x 3,000
CCD size (inches)	0.43	0.43	0.43	0.43	0.43	0.43	0.43	22.2x14.8	23.6x15.8	17.3x13.0	Unknown
Optical image stabiliser	Yes	Yes	Yes	Yes	Yes	No	No	Via lens	Via lens	Built in	Via lens
Best image format	JPEG	JPEG	JPEG	JPEG	JPEG	JPEG	JPEG	RAW/JPEG	NEF(RAW)/JPEG	RAW/JPEG	RAW/JPEG
Fastest shutter speed (seconds)	1/3,200th	1/3,200th	Unknown	1/2,000th	1/2,000th	Unkown	Unkown	1/4,000th	1/4,000th	1/4,000th	1/4,000th
Maximum ISO speed	1,600	1,600	6,400	1,600	6,400	3,200	3,200	1,600	3,200	3,200	3,200
Focus method	Auto/Manual	Auto/Manual	Auto/Manual	Auto/Manual	Auto	Auto	Auto	Auto/Manual	Auto/Manual	Auto/Manual	Auto/Manual
Focus range in cm (normal/macro)	50/0	50/0	50/1	10/1	50/3	50/5	50/5	N/A/N/A	N/A/N/A	N/A/N/A	N/A/N/A
Focal length (mm)	5-100	5-60	4.6-110.4	Unknown	4.1-49.2	4.2-42	4.2-42	18-75/35-300 (via lens)	18-55 (via lens)	14-42/40-150 (via lens)	14-45
- Equivalent 35mm focal length (mm)	28-560	28-336	Unknown	26-676	25-300	24-240	24-240	As above	As above	As above	28-90
Movie mode format	MOV (H.264)	MOV (H.264)	AVI (MJPEG)	AVI (MJPEG)	AVCHD (H.264)	MP4 (H.264)	MP4 (H.264)	None	AVI (MJPEG)	None	None
- Maximum frame rate (fps)	30	30	30	30	30	30	30	N/A	24	N/A	N/A
- Frame size at max. frame rate (pixels)	640 x 480	1,280 x 720	640 x 480	640 x 480	1,280 x 720	1,280 x 720	1,280 x 720	N/A	1,280 x 720	N/A	N/A
- Max. recording time (seconds)	Limit by card	Limit by card	Limit by card	Limit by card	Limit by card	Limit by card	Limit by card	N/A	Unknown	N/A	N/A
LCD screen size (inches)	3	3	3	3	3	3	3	3	2.7	2.7	3
Viewfinder/built-in flash	Yes/Yes	No/Yes	Yes/Yes	Yes/Yes	No/Yes	No/Yes	No/Yes	Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes
Flash hotshoe/HDMI output	Yes/No	No/Yes	No/No	No/Yes	No/Yes	No/No	No/Yes	Yes/Yes	Yes/Yes	Yes/No	Yes/Yes
STORAGE											
Built-in memory capacity	None	None	47MB	None	40MB	30MB	21MB	None	None	None	None
Flash memory type	SD (SDHC)	SD (SDHC)	SD (SDHC)	xD-Picture	SD (SDHC)	SD (SDHC)	SD (SDHC)	SD (SDHC)	SD (SDHC)	xD-Picture/CF	SD (SDHC)
POWER											
Battery type/supplied	AA-size NiMH/Yes	LiIon rechargeable/Yes	LiIon rechargeable/Yes	AA-size NiMH/Yes (alkaline)	LiIon rechargeable/Yes	LiIon rechargeable/Yes	LiIon rechargeable/Yes	LiIon rechargeable/Yes	LiIon rechargeable/Yes	LiIon rechargeable/Yes	LiIon rechargeable/Yes
Shots per charge	Unknown	280	200	Unknown	300	Unknown	Unknown	Unknown	510	500	330
CONNECTION											
PC connection type	USB 2.0 Hi-Speed	USB 2.0 Hi-Speed	USB 2.0 Hi-Speed	USB 2.0 Hi-Speed	USB 2.0 Hi-Speed	USB 2.0 Hi-Speed	USB 2.0 Hi-Speed	USB 2.0 Hi-Speed	USB 2.0 Hi-Speed	USB 2.0 Hi-Speed	USB 2.0 Hi-Speed
Dimensions in mm (WxHxD)	124 x 88 x 87	103 x 60 x 38	114 x 83 x 99	110 x 90 x 91	103 x 59 x 32	105 x 36 x 61	105 x 36 x 61	128 x 97 x 62	127 x 104 x 80	130 x 94 x 60	124 x 83 x 46
Weight (grams)	560	220	460	435	206	219	225	475	560	475 (body only)	385
IMAGE QUALITY (out of 10)	8	7	8	7.5	7.5	7	7	7.5	8.5	8	7.5

Pump up your iPod

Alex Kidman tests 20 speaker sets with iPod docks to find out which ones offer the best bang for buck.

20 TESTED

_DESKTOP iPOD SPEAKER DOCKS

Apple has seemingly licensed the iPod dock connector to any company able to string a pair of speakers together, whether they're with quality cables or bits of mouse-nibbled string. It can therefore be tough to tell whether a given iPod speaker dock is actually worth the asking price, and it's critical to listen to any set of speakers you're considering before handing over any cash. Compared to previous iPod-speaker roundups, one feature we saw a lot more of this time was iPhone compatibility. If you plug an iPhone into an unshielded iPod dock, by default it'll suggest switching off its phone components, not to save power, but to eliminate electromagnetic interference, something you've probably experienced if you've put any mobile phone too close to a speaker before. iPhone shielding costs money and predictably, a shielded speaker dock will cost a little more than those that aren't. That said, we were surprised by the number of high-cost docks that weren't shielded.

90%

SONY SRSGU10IP

PRICE $240
CONTACT SONY
PHONE 1300 137 669
WEB www.sony.com.au

PC USER BEST BUY

Sony's SRSGU10IP is a physically large unit with a fairly standard 'speakers behind the dock' arrangement. And while it's certainly too big and heavy to be particularly portable, it has some serious power behind it, with a vendor-claimed output of 20W — quite meaty for an iPod speaker dock. Impressively,

it was only when we really pushed these speakers with a bass-heavy audio track at top, ear-bleeding volume that they distorted; otherwise the audio quality was genuinely superb for a dock in this price range. It's iPhone compatible, although one thing we did miss that other mid-priced docks feature is

any kind of inline display; you're limited to only the iPod's own screen. At this medium price point, you can't beat the SRSGU10IP.
PC User says: An excellent dock for those who just want good audio.

ALTEC LANSING T612

PRICE $315 / **CONTACT** ALTEC LANSING
PHONE 1800 089 681 / **WEB** www.alteclansing.com

85%

The T612 places your iPod dead centre of a large speaker stack and is similar to the iMT702 (see page 32) in most respects, except that it omits radio from the equation in return for a slightly cheaper asking price. Like the iMT702, it's rather large and resolutely deskbound, with no battery option to speak of. The remote control is similar to most other iPod dock remotes, being small

and rather easy to lose, although it does benefit from a pretty wide angle of reception. The T612's audio quality was very good and easily on par with the similar iMT702 — and for a lesser asking price. If you're after an iPhone-compatible dock, even though it's older the T612 is still what we'd plump for.

PC User says: A good-quality iPhone-compatible dock, as long as you don't need extras.

Buyer's checklist

CYGNETT UNISON I-XT

PRICE $270 / **CONTACT** CYGNETT / **PHONE** (03) 9429 2552 / **WEB** www.cygnett.com

The Unison i-XT splits the dock part of its audio away from the speaker via lengthy audio and power cables, giving it a certain amount of flexibility when it comes to placing the speakers. Having said that, in our tests the power cables never sat flush in the dock, which was worrying. With a dedicated subwoofer, this is technically a 2.1 system, with bass performance better than most we saw. However, you'll pay for that in terms of portability — the speaker stack is huge by comparison. At this size, a full speaker system might be a better buy, but it's decent if all you want is iPod and heavy bass.
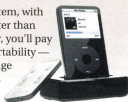
PC User says: Big and bulky, but with good sound.

PHILIPS SBD8100

PRICE $219.95 / **CONTACT** PHILIPS
PHONE 1300 363 391 / **WEB** www.philips.com.au

The large, iPhone-compatible SBD8100 has one notable party trick up its sleeve: a rotating dock connector. This has the greatest application for iPhone/iPod Touch users who want to watch video, as it's robust enough to flip sideways and have widescreen video playing in the correct proportions. We did hit some snags, with our iPod Touch intermittently not recognising the dock properly in our testing, but that aside, the audio quality was quite good, with optional bass control and the rather unusual choice of backlight behind the dock mount. It's also battery capable, although you'll need to feed it a whopping eight AA batteries to keep it going.

PC User says: Twisting the iPod is just a gimmick, but this unit is quite capable.

EDIFIER IF330 PLUS

PRICE $115 / **CONTACT** AUDION INNOVISION
PHONE 1300 300 364 / **WEB** www.edifier.com

This is a no-frills iPod speaker dock, but that's not necessarily a bad thing. You're not paying for features you don't need, although iPhone users should note that it doesn't include shielding, so you may have to set your phone to flight mode. The dock connector pops out of the base and a rear panel allows for AC, AA batteries and audio and video output. A snug neoprene carrying case is included. Audio quality was fair without being exceptional and as you might expect, heavy bass or extreme volumes were problematic. At the budget end of the spectrum, the unit performs nicely.

PC User says: Inexpensive yet surprisingly good for the price.

REVO BLOK

PRICE $699 / **CONTACT** BUSH AUSTRALIA / **PHONE** 1300 131 072 / **WEB** www.revo.net.au

There's no clock, CD player or Bluetooth support, but the BLOK offers something unique — it's made of wood. This has a marked effect on audio quality, aided by 40W output power and NXT loudspeakers. It aced our audio tests, with excellent bass and minimal distortion even at top volume. Surprisingly, it's not shielded for iPhone use. For many iPod users — especially those with music sourced at low bit rates — you won't get the full effect out of these excellent speakers.

PC User says: Great audio, but at a very steep asking price.

ALTEC LANSING OCTIV AIR

80%

PRICE SINGLE SPEAKER, $599; DUAL SPEAKERS, $820 / **CONTACT** ALTEC LANSING
PHONE 1800 089 681 / **WEB** www.alteclansing.com

The octiv AIR plays in the same market as the Cygnett Unison i-XT in that it separates the dock and speaker units for ease of placement. Where the AIR tries to justify its much higher asking price is that it's all wireless, with the option to pair two sets of speakers for even greater power output if required (albeit at an additional cost). The audio quality in our tests was very good, with punchy bass and crisp high notes across most musical genres. There is a catch, though. It uses the same 2.4GHz wireless frequency as plenty of other wireless equipment, including 802.11g wireless networking. In our testing, the AIR got along flawlessly with our wireless network, but noticeably introduced a bit of sluggishness in a Logitech wireless mouse being used nearby.
PC User says: An expensive wireless solution with good audio quality.

PANASONIC SC-HC3

75%
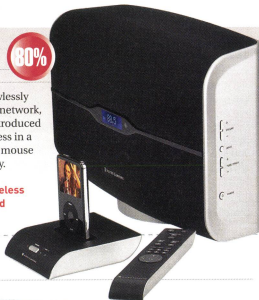
PRICE $389 / **CONTACT** PANASONIC / **PHONE** 13 26 00 / **WEB** www.panasonic.com.au

Panasonic clearly has a different definition of 'compact' than the one we're used to. The SC-HC3 dwarfs just about every other dock in the roundup, but then it's more of a music system that happens to include iPod compatibility than anything else. A central panel slides one way to reveal a CD player and the iPod dock is on the reverse of it. You load any iPod into the SC-HC3 rather like a cassette tape, although this does mean that it's tough to control the iPod once it's inserted. It's also disappointingly not shielded for iPhone use. The audio quality was very good, with a variety of equaliser presets to enhance the tones of specific music types. It's a solidly built system that certainly does sound nice.
PC User says: A good-quality stereo system, but not for iPhone users.

ALTEC LANSING INMOTION MAX IMT702

75%

PRICE $350 / **CONTACT** ALTEC LANSING / **PHONE** 1800 089 681 / **WEB** www.alteclansing.com

The inMotion MAX is iPhone capable and somewhat larger than many of the speaker sets in our roundup; you'd need a pretty hefty bag to carry it around despite its claim of 'portable sound'. Conversely, its credit card-sized remote control could easily be lost in a shirt pocket. It's radio capable — but not digital radio, just regular FM — with a pop-out tray to house your iPod of choice. The iMT702 can get loud, but this shouldn't be equated with good, as we did notice some distortion, especially on bass-heavy tracks. As a desktop-based iPod speaker solution it's a fair offering, but better alternatives exist.
PC User says: Big and loud, but not that great.

PHILIPS SBD7000

70%

PRICE $169.95 / **CONTACT** PHILIPS / **PHONE** 1300 363 391 / **WEB** www.philips.com.au

The SBD7000 proves there's no shape you can't make a stereo dock out of. To avoid rocking around, a stand pops out at the back of the unit. It's a nice design, but impractical in real use. We struggled with popping out the stand and not disconnecting the AC power, although you can use four AA batteries. It uses plastic holders for iPhones (2G and 3G) and iPod Touch models, although we had trouble getting a second-generation iPod Touch to fit properly. Once connected, we were underwhelmed with the audio, which had a tendency towards tinny treble. Despite being rated for iPhone use, we noticed electromagnetic chirping from time to time.
PC User says: A gimmicky circular concept doesn't make for a great dock.

Tech terms

DAB (Digital Audio Broadcasting). A digital radio standard that's currently rolling out across Australian capital cities. Some newer iPod docks support DAB. **iPod dock connector.** An Apple connection standard that allows iPods to be plugged into devices. Apple licenses the dock connector to other vendors for a fee; in return, you should see a 'Made for iPod' (or 'Works with iPhone') logo on the packaging.

CYGNETT GROOVENEO

PRICE $150 / **CONTACT** CYGNETT / **PHONE** (03) 9429 2552 / **WEB** www.cygnett.com

Cygnett's GrooveNeo speakers come from the same family as the GrooveTime II below, but this is the better of the two models, owing mostly to its bigger size. We can't imagine using this as a bedside clock, since the display is utterly immense; however, as a room clock with alarm, it would work quite well. The inbuilt buttons are similarly huge, resembling a child's toy, and are very easy to use. The extra size really does make the difference between this and the GrooveTime II, with the Neo offering very good audio quality at all but the highest volume settings across a variety of musical styles.
PC User says: You get a lot of dock for your money and good sound.

85%

LOGITECH PURE-FI EXPRESS PLUS

PRICE $130 / **CONTACT** LOGITECH / **PHONE** 1800 025 544 / **WEB** www.logitech.com

Like the Pure-Fi Anytime (see below), the Pure-Fi Express Plus isn't much more than two speakers with a central control area. The Express Plus includes a clock alarm (but no radio) and a small stubby remote with basic playback controls. As a clock, it's arguably a little big to stick on your bedside table. In the field of iPod clock docks, where audio generally wasn't that great, it stood out for relatively clear sound, with only the mildest problems at top volume.
PC User says: Good-quality sound and a basic clock in one device.

85%

PHILIPS DC350

PRICE $299.95 / **CONTACT** PHILIPS / **PHONE** 1300 363 391 / **WEB** www.philips.com.au

This relatively tiny dock stacks its speakers vertically rather than horizontally and sells itself as a 'music system for business executives'. This equates to iPhone support, Bluetooth support, clock radio and a small remote control with very good button controls, comparable to a TV remote rather than the flat and unresponsive controls found on most other dock remotes. While it's a bit more costly than many other alarm clock models, it justified this with quite crisp sound, except towards the very top end of its volume, which is a common problem with many iPod speaker sets. It's also a nice space saver, as while it's tethered to power, its vertical orientation makes it an easy fit on any desk — executive or not.
PC User says: An excellent docking solution, but at a price.

85%

CYGNETT GROOVETIME II

PRICE $150 / **CONTACT** CYGNETT / **PHONE** (03) 9429 2552 / **WEB** www.cygnett.com

The GrooveTime II's big selling point among the alarm clock-based iPod docks is its size. This compact speaker system should fit on even the tiniest bedside table, as it's not much bigger than the box for an iPhone. A credit card remote control is provided, although predictably, iPod-specific controls are rather thin. With its small size we were curious to see how well it could handle sound output. While initial impressions were favourable — at low volumes, it was quite passable; anything approaching loud, the distortion kicked in quite badly, even on tracks that were low in bass.
PC User says: Good for the space-constrained crowd who don't need it to be loud.

70%

LOGITECH PURE-FI ANYTIME

PRICE $165 / **CONTACT** LOGITECH / **PHONE** 1800 025 544 / **WEB** www.logitech.com

The Pure-Fi Anytime's claim to fame is motion control — you can use a wave of a hand to activate this set's snooze controls, rather than having to hit an actual button. It's a feature that's somewhat cool, but not exactly a key selling point. Sadly for the Anytime, it's otherwise a fairly ordinary speaker dock; not terrible, but not standing out over and above clock-based units selling for less. You pay a bit more for what really is a gimmick, and we'd take the Pure-Fi Express Plus over this on price alone.
PC User says: Motion control works, but it's only really cool the first time.

70%

GRUNDIG DAB+ IPOD DOCKING RADIO

PRICE $299 / **CONTACT** BUSH AUSTRALIA / **PHONE** 1800 509 394 / **WEB** www.grundig.net.au

Grundig is clearly trying to sell this particular dock more on its DAB credentials than its iPod compatibility. Still, it does some things in a slightly different way to other docks. While it has a familiar 'dock in front of wide speakers' arrangement, there's an enclosing hood bezel around the entire speaker, which also serves to highlight when there's an iPod or iPhone in situ. It's annoyingly not iPhone shielded and the sound is rather flat, even with adjustments to the bass and treble settings. In DAB terms, we'd pick this over the Chronos iDock below, but if iPod connectivity is really all you're after, look elsewhere.

PC User says: Flat sound and ordinary construction make for an average dock.

65%

PURE CHRONOS IDOCK

PRICE $449 / **CONTACT** PURE / **PHONE** (03) 9722 2422 / **WEB** www.pure.com/au

Despite the name, the Chronos iDock arguably sells itself more on its DAB compatibility — that's certainly got to be its justification for its asking price — than its iPod connectivity. It's a triangular-shaped dock and speakers, which is mildly unusual, with a large, bright LED display at the front. On the plus side, we liked the iDock's large controls (it'll also double as an alarm clock via radio, DAB or iPod), but were somewhat unimpressed with its speakers, which had a tendency to render a lot of music a touch on the flat side. The credit card-sized remote isn't anywhere near as good as the button controls, and suffers from poor reception angles as well as a generally cheap and unresponsive feel.

PC User says: DAB is mildly interesting, but its sound is flat.

60%

AVLABS AVL785

PRICE $99.95 / **CONTACT** AUDION INNOVISION / **PHONE** 1300 300 364 / **WEB** www.avlabs.net

This AVL785 features a bright LED on the front of the unit, giving the impression that this is really more concerned with being an FM alarm clock than an iPod dock. On the plus side, the buttons are huge, with dials for volume and FM radio frequency scanning. That's where the good news ends, though, as the unit's plastic enclosure rattles even when you just pick it up. Putting high-volume sound through it is an invitation to distortion and low-quality sound. At the price (the cheapest in our roundup) that's hardly surprising, but it's not desirable either.

PC User says: A budget dock with typical budget audio.

55%

SONY ICFCD3IP

PRICE $155 / **CONTACT** SONY / **PHONE** 1300 137 669 / **WEB** www.sony.com.au

Sony figures there's a market of iPod users out there who haven't ripped their CDs to the iPod, as their take on an iPod alarm clock dock includes a vertical CD player, as well as standard FM radio. We're not sure about that, and we suspect it's a bad idea to call your dock a 'Dream Machine' unless it really is superb in all respects. It's easy to get to grips with the ICFCD3IP, as it has huge buttons that are clearly labelled. On the plus side, it's shielded for iPhone use, however, it fared poorly in our audio tests. The highly tinny speakers only saved themselves from distortion at higher volumes because the speakers themselves never get that loud anyway.

PC User says: Tons of easy-to-use functions, but tough to listen to.

55%

SANYO DMPP8

PRICE $109 / **CONTACT** SANYO / **PHONE** 1300 360 230 / **WEB** www.sanyo.com.au

Like the ICFCD3IP above, Sanyo's take on the iPod dock clock has big, friendly buttons, which has a certain appeal for wake-up music features. The display has terrible viewing angles, though. The audio quality was generally fine, but unlike similar efforts, Sanyo hasn't limited the upper volume level, so it's surprisingly easy to blow out most music by trying to play it too loud. If you're cash-strapped, the DMPP8 does what it claims, but only just; otherwise look elsewhere.

PC User says: Inexpensive, but ordinary sound and a poor clock screen.

50%

Connect your car

David Flynn tests a bevy of devices that allow you to get the most from your phone or iPod while you're in the car.

20 TESTED

Almost 40 years on, The Doors suggestion to "keep your eyes on the road and your hands upon the wheel" is still about the best piece of driving safety advice you can get. This month, we've tested a range of in-car products designed to help you do just that.

Devices like Bluetooth car kits mean you don't need to risk accidents (or hefty fines) while trying to juggle your mobile phone to make or take a call while driving. iPod FM transmitters, which rebroadcast

music from your iPod or iPhone over your car's FM stereo, can certainly make those long road trips less of a drag.

We put 20 of the best Bluetooth and iPod FM kits through their paces around the Sydney CBD and suburbs. We chose the iPod because it's clearly the most popular digital music player, although many FM adapters are also available with a standard 3.5mm headphone jack, which can be plugged into the headphone socket of other MP3 players.

Our tests were conducted in two different cars: a four-door family sedan and a two-seater convertible, the latter of which we drove both top-up and top-down to push the gear (especially Bluetooth hands-free kits) to its limits.

We leaned towards systems that were a snap to install and, at most times, were easily moved from car to car. What surprised us most was how affordable so many of these systems are, with plenty of decent products in both

categories hovering around the $100 mark.

There's really no excuse not to have some form of Bluetooth hands-free solution when you hit the road, even if it's just an earpiece. And after an hour driving to your favourite tunes beamed from your iPod over FM radio, you'll soon tire of listening to the regular broadcast stations.

_BLUETOOTH CAR KITS

BLUEANT S1

PRICE $100 / **CONTACT** BLUEANT WIRELESS
PHONE 1300 669 049 / **WEB** www.blueant.com.au

BlueAnt continues to produce first-grade Bluetooth gear such as this streamlined S1 visor kit. The voice recognition software lets you answer calls just by saying "Answer," although it doesn't read out the caller ID from incoming calls (you'll need the SuperTooth 3 model to do that). The S1 boasts great volume and clarity at both ends of the call, and remained clear even when driving around the suburbs with the roof down. The tight-

fitting visor clip also won't come off in a hurry. One of its unique traits is that it can be simultaneously paired with two phones in the same car, giving hands-free convenience to the passenger as well as the driver. Streaming music from your mobile phone through Bluetooth stereo works well, but is let down by the small speaker — we'd love to see BlueAnt add an FM transmitter

to this unit so music could be beamed across your car stereo.

PC USER BEST BUY

90%

PC User says: Truly excellent value for such a budget price.

MOTOROLA MOTOROKR T505

PRICE $115 / **CONTACT** MOTOROLA
PHONE 1300 138 823 / **WEB** www.motorola.com.au

While larger than most other visor-mounted Bluetooth kits, the T505's dark colouring and curved lines help it remain unobtrusive. An inbuilt FM transmitter allows incoming calls to be streamed through your car stereo speakers, with an automated female voice announcing the calling number or name, based on your mobile's phone book. Audio quality was clear in both directions, although

incoming calls sounded a little hollow over the FM radio. If your phone supports A2DP, the T505 can play digital music from your phone over the FM radio, with basic playback controls on the front of the unit. Motorola's Station Finder technology helps the T505 locate a clear frequency on the FM band during setup, which can be changed if you drive into an area where that frequency is used, such as a local

community FM station.
PC User says: The T505 is a good

PC USER BEST BUY

90%

combo for hands-free Bluetooth and MP3 playback.

PARROT MKI9100

PRICE $399 PLUS INSTALLATION / **CONTACT** STRIKE GROUP
PHONE 1300 792 044 / **WEB**

At the top end of the Bluetooth hands-free market are kits like the Parrot MKi series, which need to be fitted by a professional installer; this isn't a DIY job unless you're highly skilled. Incoming audio is routed through your car's speakers using a hard-wired connection into the stereo itself. The MKi9100 also plays music from your phone, MP3 player or even a USB key, and is compatible with iPhones and iPods. This results in excellent audio quality, helped by a twin microphone module that can be mounted just under the rearview mirror or on the dashboard shelf. An additional OLED display shows the name or number of incoming calls, thanks to phone book synchronisation with your mobile, as well as MP3 tag data from your music player. Voice recognition can be used to place calls, while control over calls and music playback is via a small remote module.

PC User says: An expensive option, but well integrated and works a treat.

85%

NOKIA HF-310

PRICE $115 / **CONTACT** NOKIA
PHONE 1300 366 733 / **WEB** www.nokia.com.au

80%

This is a fiendishly clever piece of engineering. The hands-free unit itself looks like a squat hockey puck packed with a high-capacity battery, which Nokia rates for up to 30 hours of talk time. A tiny hinged gimbal attached to a mounting fixture lets you plant the HF-310 in almost any location in your car, from the visor, the dashboard or anywhere along the centre console. This flexibility helps tailor the location to instances where you might want more pickup of a passenger's voice, for instance. Audio quality in both directions was solid and clear, especially from incoming calls. A single lozenge-sized answer/end button dominates the front-facing speaker, while the bezel is a rotating volume control. There's also automatic power-down after 30 seconds without a paired connection.

PC User says: No fancy features, but there's solid performance and design.

SONY ERICSSON HCB-105

PRICE $125 / **CONTACT** SONY ERICSSON
PHONE 1300 650 050 / **WEB** www.sonyericsson.com.au

80%

This sun visor clip-on unit has the clean European style to match most Sony Ericsson phones, although it will, of course, pair to any other Bluetooth-equipped mobile phone. Its clean lines and dark charcoal grey finish also blend in with most modern cars' colour schemes. The designers got the ergonomics right: the primary call and power controls are at the leading edge of the curved wedge and the volume and pairing buttons set slightly back, adjacent to the dual microphone pickups. In practice the results were good, with solid audio in both directions. The unit powers down after 10 minutes without an active Bluetooth connection to save battery life, although you can top this up using the supplied 12V adapter.

PC User says: Ticks all the boxes for an excellent value mid-range Bluetooth box.

KENSINGTON LIQUIDAUX BLUETOOTH CAR KIT

PRICE $110 / **CONTACT** KENSINGTON / **PHONE** 1300 366 376 / **WEB** http://au.kensington.com

75%

The LiquidAUX adopts a novel modular design. The main unit is built into the cigarette lighter adapter and handles Bluetooth radio and call functions, and can recharge your phone via USB if you have a cable. A secondary wireless remote clamps onto your steering wheel for answering calls and controlling MP3 music playback. So where's the speaker? The LiquidAUX uses your car stereo, but instead of an FM transmitter, it relies on a 3.5mm audio cable for your car stereo's aux input. Such inputs are rare so that restricts this otherwise smart solution. The microphone being in the cigarette lighter adapter also hampered audio pickup with the window half down.

PC User says: A decent kit for the price, as long as your stereo is compatible.

CYGNETT GROOVETOOTH TALK

PRICE $100 / **CONTACT** CYGNETT / **PHONE** (03) 9429 2552 / **WEB** www.cygnett.com

A pair of magnets on the rear of the GrooveTooth provides firm attachment to the driver's side visor or air vent using the supplied clip-on metal mounting brackets. We found the air vent mounting provided the best results for outgoing audio

(although this will depend on your vehicle's layout), but in either location the audio remained on the thin side and was overcome by noise when we wound down the driver's window. In addition to easy pairing with up to eight

handsets, the GrooveTooth's battery can be recharged from your PC using the supplied USB cable for an estimated seven hours of talk time as a desktop hands-free speakerphone.
PC User says: This cheap solution delivers Bluetooth on a budget.

70%

PARROT MINIKIT CHIC

PRICE $119 / **CONTACT** STRIKE GROUP / **PHONE** 1300 792 044 / **WEB** www.parrot.com

The slim MINIKIT Chic sports a stylised floral pattern in white, grey and black with silver trim. Flat panel technology turns the underside into a resonating speaker that provides thin yet punchy audio, as long as the windows are up. The lack of any power status light can confuse until you learn to trust the Chic

to turn itself on and off based on the presence of a paired device, but we'd prefer to see a simple blue LED all the same. It pairs with up to five phones and can download contacts from your phone, to be dialled using the rotary selector or quite accurate voice recognition software. It also announces the contact name of

incoming calls. The visor clip is (literally) the weakest link. This slim wire assembly is fiddly to fit and fails to hold the Chic snug. In our testing, after an hour on the freeway, it had almost worked its way loose from the visor.
PC User says: Good performance and design let down by the visor attachment.

65%

SONY ERICSSON HCB-150

PRICE $200 / **CONTACT** SONY ERICSSON / **PHONE** 1300 650 050 / **WEB** www.sonyericsson.com.au

Compared to the excellent and affordable HCB-105, the HCB-150 sports bland styling and comes with a serious shock if you pay the $379 retail price. Fortunately, the street price is a more realistic $200. There's some gutsy audio courtesy of the dual 2W speakers, which delivered punchy audio,

even in our convertible. The OLED display is easy to read in most light conditions, but it only displays names from your address book when synchronised to a Sony Ericsson handset — with any other phone you just get numbers. While there's support for five handsets and

25 hours of talk time, it doesn't support Bluetooth stereo for music streaming and lacks an FM transmitter, both of which you get on the much cheaper Motorola T505.
PC User says: Even at discounted prices, it doesn't quite stack up.

60%

SUDIO VOGUE

PRICE $89 / **CONTACT** FORCE TECHNOLOGY / **PHONE** 1300 736 723
WEB www.sudio.com.au

The Vogue takes its name less from the slim elongated design of the visor clip-on module than from the fact that it's available in pink, blue, white and black. The controls are amply sized to hit with a well-aimed stab: a large

call/finish button, a volume toggle and an awkwardly placed mute button on the top edge of the device. Despite the oversized speaker, incoming audio sounded hollow and had a noticeable bias towards the top end. Outgoing

audio fared even worse, with distortion and clipping evident on most calls. We saw no evidence that the Vogue's claimed digital signal processor chip was making any difference

for noise reduction.
PC User says: It's worth spending more on another product for better performance.

60%

Tech terms

A2DP (Advanced Audio Distribution Profile). More commonly known as Bluetooth Stereo, this allows for two audio channels (left and right) to be beamed between Bluetooth devices, most commonly a mobile phone to a hands-free car kit or headset. It's sometimes called streaming Bluetooth.

Auxiliary (aux) input. The aux input on a car stereo allows for the connection of an additional audio source beyond the standard AM/FM radio or CD

player. This provides the cleanest and highest-quality signal from an MP3 player such as an iPod, as compared to using an FM transmitter. Most aux car stereo units have a front-panel aux jack, which means that gear relying on aux input will require a professional installation. For this reason, FM transmitters are a simpler and more cost-effective option.

FM. While the letters themselves stand for Frequency Modulation, the most popular application of this technology is the FM

radio broadcast band, which spans from 88-108MHz. Very low-power FM transmitters attached to your iPod can beam the music over the distance of a few metres, provided you can find a vacant channel on the often crowded FM band.

Pairing. The process of authorising two Bluetooth devices to work together (typically your mobile phone and hands-free kit) is called 'pairing'. This involves entering a device's four-digit passcode in order to authorise the initial connection. The default passcode is usually 0000 or 1234.

BELKIN TUNEBASE FM WITH HANDS-FREE

PRICE $140 / **CONTACT** BELKIN / **PHONE** 1800 235 546 / **WEB** www.belkin.com/anz

This hands-free iPhone kit offers a choice of MP3 playback through your car stereo over the FM band or via a direct connection to an aux input socket. This provides superior-quality sound without the risk of FM interference, as long as your stereo system has an aux socket on the front panel. The swivel-mount cradle has a sliding assembly to give a snug fit to most iPods and iPhones, and sits atop a stiff 12cm gooseneck leading to the chunky power adapter, which plugs into your car's 12V DC cigarette lighter. The adapter includes a bright white LCD readout of the current frequency, plus buttons for two presets. To one side sits a USB charge socket, which might prove inaccessible depending on the location of the 12V DC jack. A multifunction button at the base of the iPhone/iPod dock provides call control plus play/pause/skip during music playback. There was no faulting the performance of the FM transmitter during our tests. **PC User says:** A solid and versatile kit at a surprisingly low price.

90%

NEWERTECH TRAFFICJAMZ

PRICE $30 / **CONTACT** MACFIXIT AUSTRALIA / **PHONE** (03) 9329 4343 / **WEB** www.newertech.com

The TRAFFICJamz works better than you'd expect any $30 product has a right to. There's nothing fancy to it: a 12V DC cigarette lighter adapter provides the power for the FM transmitter and also keeps your iPod battery topped up. This trait alone puts it ahead of iPod kits that rely on AA or AAA cells, or drain the iPod's own battery. Having connected the TRAFFICJamz to your iPod and 12V socket, you tune your car radio to a vacant frequency anywhere in the FM band and set the TRAFFICJamz to the same channel. You can program an additional three frequencies for easy channel hopping during longer road trips. We found no static or bleed-through from adjacent channels during our tests around Sydney. **PC User says:** This is undoubtedly the best value for anyone on a budget.

90%

BELKIN TUNEBASE FM WITH CLEARSCAN

PRICE $115 **CONTACT** / BELKIN / **PHONE** 1800 235 546 / **WEB** www.belkin.com/anz

This is a smart solution for a car shared by drivers with different types of iPods. The cradle allows for five interchangeable plastic shells to suit the iPod Classic, Touch and Nano, and small 'spacer pads' to ensure a snug fit. Each iPod draws its power from the cigarette lighter via a metal gooseneck, but it's a bit short (a mere 8cm) and this will pose a problem in some cars, depending on the layout of the socket and distance to the driver's seat. That caveat aside, the TuneBase FM looks classy enough to suit any car and delivered a solid FM signal on every test run, with push-button audio optimisation to boost volume levels or drop back to mono. That there are only two FM presets is a disappointing drawback. The white LCD display is easily read by day and night. **PC User says:** A great accessory for a shared family car.

80%

BELKIN TUNECAST AUTO WITH CLEARSCAN

PRICE $100 / **CONTACT** BELKIN / **PHONE** 1800 235 546 / **WEB** www.belkin.com/anz

The TuneCast Auto is Belkin's take on the iPod FM/charger combo kit. On the plus side, this is a single assembly – a generous 110cm cable with a 12V DC plug at one end, a standard 30-pin iPod connector at the other and a controller module with FM transmitter and digital readout in the middle. The cable is too long and needs to be tucked into the centre console for safety. For what it is and what you get for your money, the TuneCast Auto does well enough. The FM transmitter performed well and without interference during our tests, aided by a ClearScan sweep for vacant frequencies, although the presence of only two presets is limiting around inner-city suburbs. The high-contrast backlight display proved easy to read at a glance. **PC User says:** A good solution if you can track it down at a discount.

80%

GRIFFIN ROADTRIP WITH SMARTSCAN

PRICE $150 / **CONTACT** POWERMOVE / **PHONE** (03) 9358 5999 / **WEB** www.griffintechnology.com

This unit has a short gooseneck for the cigarette lighter socket and a small cradle for an iPod, but there's no side support for an iPod or iPhone, so the fitting wasn't too secure, and the cradle itself had a relatively loose fit to the gooseneck. SmartScan seeks out the three clearest FM channels and automatically saves them as presets, or you can choose your own. The digital readout is bright and easily read in most lighting conditions. You can switch between stereo and mono for optimal reception, something we never had to do because the FM signals were fairly clean and stable throughout testing. **PC User says:** A good buy for highways and suburban streets.

75%

CYGNETT GROOVETRANSMIT

PRICE $130 / **CONTACT** CYGNETT / **PHONE** (03) 9429 2552 / **WEB** www.cygnett.com

The GrooveTransmit belongs to the breed of FM transmitters with a 12V DC cigarette lighter adapter at the end of a short (12cm), stiff gooseneck. This in turn attaches to a cradle that can accept anything from a tiny iPod Nano up to an iPhone, keeping the MP3 player in full view —

and its controls within easy reach — while you drive. In addition to manual tuning, the GrooveTransmit offers automatic scanning for a clear FM channel. The frequency is shown on a red LCD that unfortunately washes out in bright light, although it's not too distracting for nighttime

use. Four unlabelled buttons can switch between preset frequencies. Its signal quality was superior to most of the iPod adapters, with only minor bursts of static.

PC User says: A reliable solution for both long trips and short runs around town.

75%

DEXIM DFA003A

PRICE $90 / **CONTACT** IWORLD AUSTRALIA / **PHONE** (03) 9532 3300 / **WEB** www.dexim.net

The DFA003A combines the iPod plug-in approach of the lower-end FM adapter market with a 12V DC charger for your car's cigarette lighter. This prevents the FM transmitter from draining the battery of your iPod or iPhone. We found the FM radio was slightly less susceptible to sporadic interference compared

to the smaller battery-powered units. However, the solution as a whole is less elegant than the TRAFFICJamz because the Dexim relies on a separate USB cable to connect the 12V DC charger to the iPod adapter, rather than having the cable built into the charger. Lose the cable or accidentally leave it behind

and you can forget about enjoying those hours of driving music.

PC User says: Acceptable FM performance, but there's one part too many here.

70%

ILUV I707

PRICE $120 / **CONTACT** IWORLD AUSTRALIA / **PHONE** (03) 9532 3300 / **WEB** www.i-luv.com

70%

Unlike some of the gooseneck-based solutions we've seen, the iLuv adopts a multi-joint swivel arm as the link between the 12V DC cigarette lighter socket and the iPod cradle. Having used both systems, the gooseneck struck us as a simpler and sturdier method

rather than plastic assemblies. The location of your cigarette lighter socket could also be an issue because the i707's assembly can only rotate so far and in so many degrees — cramped layouts where the lighter is too close to the bottom of the console might

pose a tight fit. The white backlit LCD is easy to read. The FM quality was decent, but there are only two presets, which could be a limiting factor around the CBD.

PC User says: A bit too fiddly compared to kits with a single gooseneck adapter.

GRIFFIN ITRIP

PRICE $80 / **CONTACT** POWERMOVE / **PHONE** (03) 9358 5999 / **WEB** www.griffintechnology.com

This entry-level model from Griffin, a well-known name in the iPod accessory market, chalks up decent value compared to the rest of the iPod plug-in set, although it's still behind the TRAFFICJamz. The iTrip is a small, slim iPod FM adapter that draws its power from your iPod's battery,

so before heading out on that long road trip, make sure your iPod is fully charged. In addition to tuning throughout the range of the FM band, the iTrip can store three frequencies, with the ability to switch from stereo to mono if you're willing to forego audio quality for a stronger or clearer signal.

As with other pint-sized and battery-powered FM adapters, the transmitter let through enough static to be annoying when the stereo volume was wound up to a decent level.

PC User says: Falls short of something we'd recommend for everyone.

60%

CYGNETT GROOVESAFARI

PRICE $90 / **CONTACT** CYGNETT / **PHONE** (03) 9429 2552 / **WEB** www.cygnett.com

This is the most basic form of iPod FM adapter. The small black box clamps onto the bottom of any iPod (it's also compatible with an iPhone, as they use the same 30-pin connector) and uses the iPod's battery to drive a low-

power FM transmitter tuned to any available frequency. And when we say low power, we mean it — the signal was hampered by static even when the iPod was sitting in the car's centre console, well within a

metre of the stereo itself. We also found the touch-sensitive keys made for cumbersome stepping through the FM channels.

PC User says: There are better (and cheaper) FM transmitters on the market.

50%

Does your Broadband come with a BIG PRICE TAG?

Save $$$ now with our popular plans!

ADSL1 8M/384K — We don't count uploads!

30GB
10GB Peak
10GB Off Peak
10GB XT

FOR ONLY

$69.95 #
per month

100GB
60GB Peak
20GB Off Peak
20GB XT

FOR ONLY

$89.95 #
per month

ADSL2+ & Phone plans — We don't count uploads!

3GB
1GB Peak
1GB Off Peak
1GB XT

FOR ONLY

$20 *
per month

65GB
25GB Peak
20GB Off Peak
20GB XT

FOR ONLY

$50 *
per month

Up to **$10** *
ONGOING MONTHLY DISCOUNT
On selected ADSL1 plans. Prices displayed are the discounted price.

$60 REBATE
off the Setup Fee for ADSL2+ plans

* Plus Home Phone plans from **$29**.95 per month

Naked ADSL2+ also available
Visit supernerd.com.au for more plans

Super Nerd
for Super Quality

Visit our website or call us now

www.supernerd.com.au
1300 888 090

Notebook mega test

31 TESTED

Darren Yates runs 31 of the latest notebooks through the *PC User* Labs maze, from budget netbooks to performance behemoths.

The current notebook market seems to be awash with a range of lower-spec'd netbooks and lightweight CULV notebooks. Unfortunately, we think this situation poses a danger to consumers in that it could create a quagmire of overpriced and underpowered products. Currently, the smart place to look for a notebook is the business market, where we found a small number of classy, sub-$1,500 models that were low in weight, but big in value. In general, provided you steer clear of CULV models, most $1,300-$2,000 notebooks deliver a great mix of features, battery life, performance and price.

However, the smaller netbooks are quickly becoming too expensive for what they deliver. If you want rip-roaring application speed, the surprise of the roundup was our top benchmark score going to an ultraportable notebook. You can read page 6 for how we tested the notebooks in this feature. With 31 models to choose from, you should definitely find something here that fits your needs and budget.

_NETBOOKS

BENQ JOYBOOK LITE U101B

85%

PRICE $699 / **CONTACT** BENQ / **PHONE** (02) 8895 8800 / **WEB** www.benq.com.au

What is the perfect netbook? If you knew the answer to that, you could make a fortune because none of the netbooks we looked at quite nailed the objective of low price, portability and battery life. This Joybook is one of the few that sticks to the original netbook tenants: it delivers a basic computing device with good storage and battery life for a minimal price

tag. It's not perfect though; in fact, the trackpad is one of the smallest we've seen. It's about the same size as the MSI Wind U100 and the wrong shape for the screen. That said, the battery life of 4 hours 14 minutes for $699 is the best value we saw. Elsewhere, it's standard fare with a 160GB hard drive, Windows XP Home Edition and 1GB of memory. The 1,024

x 576-pixel screen resolution is a bit low, though. Weighing a decent 1.3kg, it means you're getting a netbook that won't break your shoulder or the bank. Still, you won't find too many netbooks delivering this sort of value any more.
PC User says: Not perfect, but excellent battery life for a tiny price tag.

ASUS EEE PC 1008HA

PRICE $899 / **CONTACT** ASUS / **PHONE** 1300 278 788 / **WEB** www.asus.com.au

75%

The best way we can describe the 1008HA is as a MacBook Air Lite. It features a sleek, curved chassis that's very light at just over a kilo, but delivers the usual netbook features. Unfortunately, that chassis means there are two shortcomings: difficult-to-access USB ports and a built-in battery. The USB ports are tucked in, so you'll have trouble with thicker USB flash drives not fitting in. The built-in battery is also a no-no in our view, despite giving an excellent 3 hours 37 minutes of runtime. How you replace it when

it finally carks it is anyone's guess. The keyboard and trackpad are great, but as with most machines in this category, there's nothing fancy in the way of extras. That makes the price a little harder to swallow compared to other models we saw. For usability, it's an excellent model, but we'd suggest waiting for the 1005HA, which is this model with a removable battery.
PC User says: Neat styling, but we don't like built-in batteries.

Tech terms

CULV (Consumer Ultra-Low Voltage). A new type of processor that aims to deliver low-cost, ultraportable notebooks. Just don't expect lightning-fast performance.

eSATA (External Serial ATA). A high-speed serial connection for external hard drives. It's less common than USB, but considerably faster.

HDMI (High-Definition Multimedia Interface). A complete digital audio/video connection system used to deliver high-quality sound and images to devices like big-screen TVs.

No Best Buy netbook?

Despite the popularity of this market segment, we haven't given any of these netbooks a Best Buy award because none of them nailed what the netbook is best for: a low-cost device with portability and good battery life. In previous reviews, we raved about the MSI Wind U100. Although MSI didn't submit one this time, we still think the Wind U100 (now the U100 PLUS), at around $600 online, is still the 10in netbook to beat for portability, battery life and price.

DELL LATITUDE 2100

PRICE $773 / **CONTACT** DELL / **PHONE** 1800 812 393 / **WEB** www.dell.com.au

The Latitude 2100 is Dell's first netbook aimed at the business/education market. Despite its chunky aesthetics, this model is more ruggedised than usual and has some good features. Our test unit came with 2GB of memory, which certainly helps with overall system performance, although the 1.6GHz Atom N270 processor didn't do anything special in our tests. The screen resolution is 1,024 x 576 pixels is a concern — there's precious little vertical resolution in 10in netbooks anyway, but with only 576 horizontal lines there's even less. Battery life is the crowning achievement of this unit, just missing the 5-hour mark by a whisker. That's the best result we've seen from a non-solid-state drive (SSD) netbook so far. Despite being a bit heavy, this is probably one of the few netbooks that would survive a term at school.

PC User says: Solid construction and excellent battery life, but low screen resolution.

75%

ASUS EEE PC 1000HE

PRICE $949 / **CONTACT** ASUS
PHONE 1300 278 788 / **WEB** www.asus.com.au

70%

Based on the original Eee PC 1000 chassis, but with a higher-quality keyboard, the 1000HE delivers excellent battery life and comes with the now-standard cache of netbook features. The chassis didn't look that good when it first arrived and today it looks positively ancient. At 1.44kg, it wasn't far off being the heaviest netbook we saw. The trouble is that it's one of the cheaper models to deliver a six-cell battery, at least in terms of this roundup. Compared to some of the newer models, the 1000HE isn't exactly svelte, but it covers the basics and delivers excellent battery life. However, we'd still go with MSI's Wind U100 PLUS first and save $200 by doing so.

PC User says: The chassis is heavy and long in the tooth, but it delivers decent battery life.

Which kind of battery?

The capacity of most notebook batteries is defined in two ways: the simpler cell count and the more accurate milliamp-hour rating. The more cells a battery has, the longer that battery will last in comparison to one with fewer cells. However, the problem with this more basic measure is that some six-cell batteries have more juice than others — the only way to fully gauge the battery capacity is to look at the overall milliamp-hour rating. The higher this number, the longer the battery will last, but it will also be heavier. We recommend you avoid three-cell batteries wherever possible, as you'll be lucky to see 2 hours of runtime at best.

NETBOOKS: HOW THEY COMPARE

Model	ASUS Eee PC 1000HE	ASUS Eee PC 1008HA	ASUS Eee PC S101H	BenQ Joybook Lite U101B	Dell Inspiron Mini 10	Dell Latitude 2100	HP Mini 110-1006TU	Toshiba NB200
Price	$949	$899	$1,099	$699	$780	$773	$699	$749
SPECIFICATIONS								
Processor	1.66GHz Intel Atom N280	1.66GHz Intel Atom N280	1.6GHz Intel Atom N270	1.66GHz Intel Atom N280	1.6GHz Intel Atom Z530	1.6GHz Intel Atom N270	1.66GHz Intel Atom N280	1.66GHz Intel Atom N280
Memory	1GB DDR2	1GB DDR2 (8MB shared)	1GB DDR2	1GB DDR2 (32MB shared)	1GB DDR2	1GB DDR2	1GB DDR2	1GB DDR2
Graphics chip	Intel Mobile 945 Express (integrated)	Intel Mobile 945 Express (integrated)	Intel Mobile 945 Express (integrated)	Intel Mobile 945 Express (integrated)	Intel GMA500 (integrated)	Intel Mobile 945 Express (integrated)	Intel Mobile 945 Express (integrated)	Intel 945GSE/GME Express (integrated)
Hard drive	160GB Seagate ST9160310AS	160GB Western Digital WD1600BEVT	160GB SATA II	160GB Toshiba MK1655GSX	250GB Hitachi HTS543225L	160GB Western Digital WD1600BEVT	160GB Western Digital WD1600BEVT	160GB Toshiba MK1655GSX
Optical drive	None	None	None	None	None	None	None	None
Screen type/size	10.1in	10.1in widescreen LCD	10.2in widescreen LCD	10.2in	10.1in widescreen LCD	10.1in widescreen LCD	10.1in widescreen LCD	10.2in widescreen LCD
Screen resolution (pixels)	1,024 x 600	1,024 x 600	1,024 x 576	1,024 x 576	1,366 x 768	1,024 x 576	1,024 x 576	1,024 x 600
Operating system	Windows XP Home Edition SP3	Windows XP Home Edition SP3	Windows XP Home Edition SP3	Windows XP Home Edition SP3	Windows XP Home Edition SP3	Windows XP Home Edition SP3 [XP Pro SP2 supplied]	Windows XP Home Edition SP3	Windows XP Home Edition SP3
PERIPHERALS								
HDMI/eSATA	No/No	No/No	No/No	No/No	No/No	No/No	No/No	No/No
USB/FireWire	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No
BATTERY/WEIGHT								
Battery type/capacity	7.2V/8,700mAh LiIon	Built in (2,900mAh)	7.3V/4,200mAh LiPo	11.1V/4,800mAh LiIon	11.1V/24Wh LiIon	11.1V/5,045mAh LiIon	10.8V/2,420mAh LiIon	10.8V/25Wh LiIon
Weight (kg)	1.439	1.052	1.173	1.294	1.204	1.472	1.156	1.167
TEST RESULTS								
UserBench Encode 2009 score	8.7	8.62	8.74	8.54	7.98	8.09	8.38	8.57
- Audio component score	6.07	6.01	6.09	5.94	5.58	5.61	5.72	5.97
- Audio scores (min:sec/MB/s)	7:48/1.38	7:53/1.37	7:47/1.39	7:59/1.35	8:30/1.27	8:27/1.28	8:17/1.30	7:56/1.36
- Video component score	12.49	12.41	12.59	12.33	11.41	11.74	12.42	12.35
- Video scores (min:sec/fps)	5:24/23.07	5:27/22.93	5:22/23.25	5:29/22.78	5:55/21.08	5:45/21.69	5:26/22.94	5:28/22.83
UserBench Image 2006	7.40	7.38	7.55	7.14	8.03	7.20	7.17	7.35
UserBench Security V8 2007	8.12	8.07	10.54	10.33	14.03	8.24	12.39	10.50
UserBench HL2:LC 2008 (640 x 480)	DNR	DNR	DNR	DNR	DNR	DNR	DNR	DNR
UserBench Battery 2008	4:44	3:37	2:31	4:14	1:55	4:59	2:08	2:10

Please note that in some instances, the specifications of test notebooks supplied to *PC User* differ from the models sold at retail. Where specs differ, the parts used in our test models are indicated by square brackets. [ ] DNR – did not run.

DELL INSPIRON MINI 10

PRICE $780 / **CONTACT** DELL / **PHONE** 1800 812 393 / **WEB** www.dell.com.au

This netbook has a few good features, but there are also some compromises that undermine its overall value. It starts off with a good 1,366 x 768-pixel 10.2in widescreen LCD and a 250GB Hitachi hard drive. The screen is the highest resolution for its size and the drive is larger than the normal 160GB, which is usually the limit to qualify for Microsoft's cheaper XP licensing. However, the resolution might be too high for some as it results in very small screen text. Unfortunately, the battery is only a three-cell type, which didn't even reach 2 hours in our testing. The trackpad is a one-piece panel that doubles as the mouse buttons; we found it difficult to use with two fingers and not have the cursor moving all over the place, so it's not a great design in our book. This was the only netbook to include HDMI output; however, current Atom-based netbooks typically struggle to play H.264 video beyond 1,280 x 720 pixels, so its value is less than you might think.

PC User says: Good features, but has low battery life and a strange trackpad.

HP MINI 110-1006TU

PRICE $699 / **CONTACT** HP / **PHONE** 13 23 47 / **WEB** www.hp.com.au

HP's first efforts at netbook design didn't do much for us, but the IT giant is quickly getting its ducks in a row, with this new Mini 110 a prime example. It's a very stylish design that matches most others for features, but it takes the lead in interface usability. There's an excellent keyboard, and the trackpad, while a little thin is still very usable. Two things gave us concern, though: the 576-pixel vertical screen resolution and the three-cell battery, neither of which are great. The three-cell battery gave us 2 hours 8 minutes of life; that's a bit better than the Inspiron Mini 10, but still not good enough. There's little point in a portable netbook if it can barely deliver 2 hours of battery life, particularly when others can double that. It'd need a 1,024 x 600-pixel screen and a six-cell battery before we'd give it our recommendation.

PC User says: Nice design and price; needs more battery life.

TOSHIBA NB200

PRICE $749 AFTER $100 CASHBACK / **CONTACT** TOSHIBA
PHONE 13 30 70 / **WEB** www.isd.toshiba.com.au

Toshiba's new 10in netbook is a decent effort, but you need to be careful which model you buy. Toshiba supplied us with a three-cell battery, which was barely good for 2 hours 10 minutes. However, there's a six-cell version available, which should go close to doubling this. The NB200 is similar in profile to HP's Mini 110, with an excellent keyboard and good landscape-aspect trackpad. Otherwise, it's just standard fare with a 1.66GHz Atom N280 processor, 1GB of memory, 160GB hard drive and XP Home operating system. It has decent vertical resolution, with a 1,024 x 600-pixel screen. Its weight is almost identical to the HP Mini 110. We can only review what we've received, so on that basis the NB200 doesn't rate as highly as it might have. Any netbook that comes with a three-cell battery at this price isn't worth the time of day in our opinion.

PC User says: A nice netbook, but with a three-cell battery it's not great value.
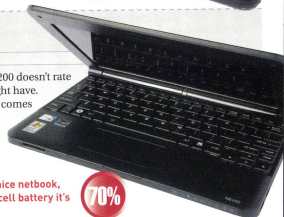
ASUS EEE PC S101H

PRICE $1,099 / **CONTACT** ASUS / **PHONE** 1300 278 788 / **WEB** www.asus.com.au

ASUS may have pioneered the netbook market in late 2007, but we can't help thinking it's slightly lost its way, given some of the models arriving lately. The S101H is what we'd call a luxury netbook, delivering standard functionality under the bonnet, but in a slick, lightweight chassis. It sells for about $1,000 online, but you have to remember it's still just a netbook, packing a 1.66GHz Atom N280 processor with 1GB of memory, a 10in screen and a 160GB hard drive. There's no way to justify spending that sort of money on a 10in netbook, especially one with a battery life of only 2 hours 31 minutes. When you compare it with the MSI Slim X320 for the same price, the S101H struggles.

PC User says: Would be much better for $150 less.

Caution with cashback offers

Most of the big-name notebook brands are now following the US trend of cashback offers where you buy a notebook, send in a coupon and get as much as $100 cash back. We're not fans of cashback offers for a number of reasons and recommend you exercise extreme caution. First, check the expiry period of the offer — you may have as little as 10 days after purchase to register for your cashback offer, which may require you registering online and snail mailing a copy of the tax invoice for your notebook purchase.

Second, it may take up to three months to get your cash. Third, you may find a deal online that's better than the original price with the cashback thrown in. And finally, you're giving your personal details to the notebook company, so make sure you read the fine print about what they plan to use them for. It's important to consider these factors before buying something based on a cashback offer — think it over because you may find that jumping through all these hoops isn't really worth it to you.

PIONEER DREAMBOOK STYLE M76

PRICE $999 / **CONTACT** PIONEER COMPUTERS
PHONE 1300 883 218 / **WEB** www.pioneer.net.au

The M76 wouldn't win any style awards if we were judging, but we can't go past it for value. It features a nice 15.4in widescreen LCD with a roomy 320GB hard drive and Intel dual-core Celeron processor. You might laugh at that Celeron chip, but it's worth remembering there are people buying netbooks at this price, and the M76 delivers three times the audio/video encoding speed of any netbook. Weight is under 3kg and although the big battery is ugly, at 3 hours 37 minutes it's welcome. One of the reasons Pioneer can do this one so cheap is that it's built on SiS chipset technology and not Intel. Still, that hasn't hurt performance. As for the price, nothing we tested in this category comes close as an all-round package.

PC User says:
Not one for the fashionistas, but big on overall value.

PC USER BEST BUY

85%

HP COMPAQ PRESARIO CQ61

PRICE $999 / **CONTACT** HP / **PHONE** 13 23 47 / **WEB** www.hp.com.au

The CQ61 is your typical budget big-brand notebook, although it offers a little bit more than you'd think. Unfortunately, there seem to be a dozen different versions of the CQ61; what makes this one different is the inclusion of an HDMI output. It's the first sub-$1,000 notebook we've seen with this feature and not all CQ61s come with it — other models feature a 250GB hard drive and no HDMI for about the same price. Application performance was behind the Pioneer M76, but still well ahead of the MSI X320. The disappointing feature was battery life — despite the six-cell battery, 2 hours 14 minutes was all we got in our tests. That's a long way behind the Pioneer entry. Still, with the DVD burner and HDMI output, you could connect this to your big-screen TV for high-quality video and sound playback. Overall, it needs to do more to match the M76.

PC User says:
HDMI output is great, but has a small hard drive and low battery life.

75%

MSI X-SLIM X320

PRICE $999
CONTACT MSI
PHONE [02] 9748 0070
WEB http://au.msi.com

We weren't quite sure where to place this notebook; in fact, we almost called it a netbook, although it doesn't exactly fit that category. The X320 is based on Intel's Atom Z530 processor, but with 2GB of memory, a 320GB hard drive, Windows Vista Home Premium and 13.4in widescreen LCD, it's clearly no netbook. It's really a poor man's MacBook Air. The one thing it lacks is speed. Intel's Atom processors just aren't up to the task; had the X320 included the same dual-core Celeron chip Pioneer used in its budget M76 notebook, this would have been a Best Buy, hands down. The battery life of 2 hours 43 minutes is acceptable in our view, but 3 hours would have been better. At only 1.3kg, it's certainly light — even weighing less than some of the netbooks. We think this is a slightly better model than MSI's own X340 and only lacks for a faster processor.

PC User says: Almost the perfect ultraportable — it just needs a faster processor.

75%

ALL-ROUNDERS UNDER $1,000: HOW THEY COMPARE

Model	HP Compaq Presario CQ61	MSI X-Slim X320	Pioneer DreamBook Style M76
Price	$999	$999	$999
SPECIFICATIONS			
Processor	2.2GHz Intel Celeron 900	1.6GHz Intel Atom Z530	1.8GHz Intel Celeron Dual-Core T3000
Memory	2GB DDR2	2GB DDR2 (8MB shared)	2GB DDR2 (128MB shared)
Graphics chip	Intel Mobile 4-series Express (integrated)	Intel GMA500 (integrated)	SiS Mirage 3 (integrated)
Hard drive	160GB Western Digital WD1600BEVT	320GB SATA II [250GB Western Digital WD2500BEVT supplied]	320GB Fujitsu MHZ2320BH G2
Optical drive	LG GSA-T50L DVD burner	None	Toshiba 8x DVD burner [Samsung TS-L633A DVD burner]
Screen type/size	15.6in widescreen LCD	13.3in widescreen LCD	15.4in widescreen LCD
Screen resolution (pixels)	1,366 x 768	1,366 x 768	1,280 x 800
Operating system	Windows Vista Home Basic SP1	Windows Vista Home Premium SP1	Windows XP Home Edition SP2
PERIPHERALS			
HDMI/eSATA	Yes/No	Yes/No	No/Yes
USB/FireWire	Yes/No	Yes/No	Yes/No
BATTERY/WEIGHT			
Battery type/capacity	10.8V/4351mAh LiIon	14.8V/2150mAh LiIon	10.8V/6,600mAh LiIon [7,200mAh supplied]
Weight (kg)	2.621	1.3	2.724
TEST RESULTS			
UserBench Encode 2009 score	22.24	7.98	24.43
- Audio component score	19.49	5.56	17.95
- Audio scores (min:sec/MB/s)	2:26/4.45	8:31/1.27	2:38/4.10
- Video component score	24.68	11.48	32.72
- Video scores (min:sec/fps)	2:44/45.59	5:53/21.21	2:04/60.45
UserBench Image 2006	3:56	7:52	3:44
UserBench Security VR 2007	4:57	11:30	3:59
UserBench HL2:LC 2009 (640 x 480)	17.4	DNR	12.2
UserBench Battery 2008	2:14	2:43	3:36

Please note that in some instances, the specifications of test notebooks supplied to *PC User* differ from the models sold at retail. Where specs differ, the parts used in our test models are indicated by square brackets [ ]. DNR – did not run.

_ALL-ROUNDERS UNDER $1,700

DELL VOSTRO 1220

PRICE $1,347 / **CONTACT** DELL / **PHONE** 1800 812 393 / **WEB** www.dell.com.au

For a surprisingly low price, the 1220 delivers an excellent all-round package: a sub-2kg weight, close to 4 hours of battery life and decent application performance. While our test unit came with a 160GB hard drive, Dell will sell this unit with a 250GB drive, 3GB of memory and a slightly faster Core 2 Duo T6670 processor — all for the same price. Application performance is a touch under four times faster than a typical netbook. The Intel 4-series integrated graphics can handle low-resolution gaming; not bad for what essentially is a business notebook. The only thing missing is an HDMI output, but when you consider the price and some of the other CULV and netbook offerings available at this price point, you'd have to wonder why anyone would bother with those.
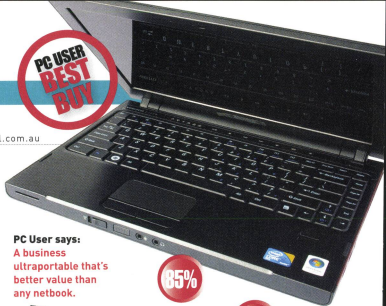
PC User says: A business ultraportable that's better value than any netbook.

HP PROBOOK 4510S

PRICE $1,489 / **CONTACT** HP / **PHONE** 13 23 47 / **WEB** www.hp.com.au

It's not often we get a look at more professional notebooks and they make for interesting viewing. This could be described as a bigger version of Dell's Vostro 1220 and it still cuts the mustard for value. It's a 15.6in widescreen chassis with an Intel Core 2 Duo T6570 processor. Our test unit came with a 160GB hard drive, but you'll get a 320GB model in the retail unit. Ours had only 1GB of memory, but you'll get 2GB, improving performance even further. This one includes ATI's Radeon HD 4330 and can display *Half-Life 2* at 77fps at 640 x 480 pixels, and it includes an HDMI output. Coupled with the built-in DVD burner, you've got a serious entertainment notebook. The weight is on the right side of 3kg and battery life was 3 hours 14 minutes — a decent effort for a bigger notebook. It's better than some of HP's consumer-oriented models and worth a look.

PC User says: We should look at HP's professional range more often.

MSI EX300

PRICE $1,674 / **CONTACT** MSI / **PHONE** (02) 9748 0070 / **WEB** http://au.msi.com

A little more expensive than the others, the EX300 might be worth it for some users. At just over 2kg, you get a decent all-round unit that has performance, features and even gaming under control. The Intel Core 2 Duo P8400 processor and ATI Radeon HD 3450 graphics chip combine to deliver 55fps on *Half-Life 2* at 640 x 480 pixels, as well as provide multimedia output support via the HDMI port. If you're looking to add external storage, you've got a choice of USB 2.0 or eSATA. The 13.3in widescreen LCD makes for a neat chassis, but we'd have liked more than 2 hours 42 minutes from the six-cell battery. The UserBench Encode 2009 score is the second fastest in the group, so you don't lose out on speed. The hard drive could be a bit bigger, but this one's a very decent effort.

PC User says: A sleek high-performance notebook that does everything pretty well.
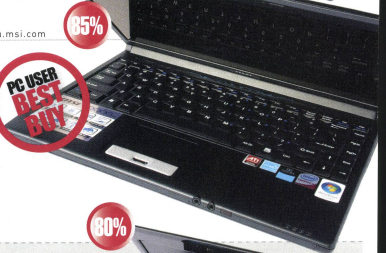
HP COMPAQ 2230S

PRICE $1,479 / **CONTACT** HP / **PHONE** 13 23 47 / **WEB** www.hp.com.au

This is the third time we've reviewed the 2230s, although it's had a bit of a facelift each time and overall, this one is a pretty solid effort. It weighs only 1.8kg and despite coming with a four-cell battery, it still managed 2 hours 36 minutes battery life; that's borderline passable in our view. Elsewhere, there's a nice selection of extras, from a 320GB hard drive to HDMI port and DVD burner, making this a great entertainment base. The only black mark was HP supplied ours with a Core 2 Duo T6570 processor; however, the unit you'll buy will only have a Core 2 Duo T5870 chip. That's only a minor difference, but it'll have a small impact on speed.

PC User says: A decent ultraportable that's just lacking a little in battery life.

PC USER BEST BUY

85%

85%

PC USER BEST BUY

85%

PC USER BEST BUY

80%

MSI EX625

PRICE $1,463 / **CONTACT** MSI / **PHONE** (02) 9748 0070 / **WEB** http://au.msi.com

The EX625 has a lot in common with Pioneer's TW8 below, with decent gaming prowess supplied by an ATI Radeon HD 4670. It's enough to push *Half-Life 2* at 640 x 480-pixel resolution to 89.8fps — a whisker behind the Pioneer, but the MSI does it for around $200 less. The EX625 comes with a 15.4in widescreen, but has a higher-resolution 1,366 x 768-pixel LCD panel than the TW8. Its application speed wasn't quite as good as the TW8, though. The fast gaming speed means taking a hit elsewhere, and that's battery life, failing to reach 2 hours. To help compensate it comes with HDMI and eSATA, so it's actually tailored better to home use than as a serious road warrior system.

PC User says: The best gaming notebook here this side of $1,500, but low battery life.

PIONEER DREAMBOOK POWER TW8

PRICE $1,649 / **CONTACT** PIONEER COMPUTERS / **PHONE** 1300 883 218 / **WEB** www.pioneer.net.au

This is a pretty decent muscle machine, given the price tag and what's on offer. Although it's only a 15.4in chassis, you get a good mix of speed and features, with a Core 2 Duo P8600 processor, 4GB of memory and Nvidia GeForce 9600M GS graphics chip. The 64-bit version of Vista Home Basic helps the 4GB of memory get full use. Extras HDMI, eSATA and a 320GB hard drive round out the deal. Battery life didn't make 2 hours though — not good with the six-cell battery. This was the fastest in the category — and almost the roundup — on gaming and multimedia, which isn't bad for a sub-$1,700 notebook.

PC User says: Plenty of muscle under the bonnet, but battery life is lacking.
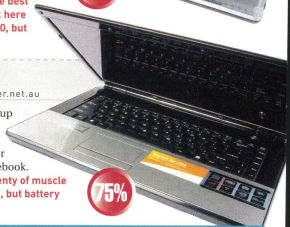
ALL-ROUNDERS UNDER $1,700: HOW THEY COMPARE

Model	Acer Aspire Timeline 4810T	Dell Vostro 1220	HP Compaq 2230s	HP Pavilion dv2-1001au	HP ProBook 4510s	MSI CX600	MSI EX300	MSI EX625	Pioneer DreamBook Power TW8
Price	$1,699	$1,347	$1,479	$1,199	$1,489	$1,399	$1,674	$1,463	$1,649
SPECIFICATIONS									
Processor	1.4GHz Intel Core 2 Solo U3500	2.2GHz Intel Core 2 Duo T8670 [2.1GHz Intel Core 2 Duo T6570 supplied]	2GHz Intel Core 2 Duo T5870 [2.1GHz Intel Core 2 Duo T6570 supplied]	1.6GHz AMD Athlon Neo MV-40	2.1GHz Intel Core 2 Duo T6570	2GHz Intel Pentium Dual-Core T4200 [2.16GHz Intel Pentium Dual-Core T3400 supplied]	2.26GHz Intel Core 2 Duo P8400	2.26GHz Intel Core 2 Duo T6400	2.4GHz Intel Core 2 Duo P8600
Memory	4GB DDR2	3GB DDR2 [2GB DDR2 supplied]	2GB DDR2	2GB DDR2 RAM	2GB DDR2 [1GB supplied]	2GB DDR2 RAM	2GB DDR2 RAM	2GB DDR2	4GB DDR2
Graphics chip	Intel Mobile 4-series Express (integrated)	Intel Mobile 4-series Express (integrated)	Intel Mobile 4-series Express (integrated)	ATI Radeon X1270 (integrated)	ATI Mobility Radeon HD 4330	ATI Mobility Radeon HD 4330	ATI Mobility Radeon HD 3450	ATI Mobility Radeon HD 4670	Nvidia GeForce 9600M GS
Hard drive	320GB Western Digital WD3200BEVT	250GB SATA II [160GB Western Digital WD1600BEVT supplied]	320GB Hitachi HTS543232	250GB Western Digital WD2500BEVT	320GB SATA [160GB Fujitsu MHZ2160BH G2 supplied]	320GB SATA [250GB Western Digital WD2500BEVT supplied]	250GB Fujitsu MHZ2250BH G2	250GB Western Digital WD2500BEVT	320GB Fujitsu MHZ2320BH G2
Optical drive	Samsung TS-UK33A DVD burner (slot-loading)	LG GT10N DVD burner	Optiarc AD-7561S DVD burner	None	LG GT20L DVD burner	Optiarc AD-7560S DVD burner	Optiarc AD-7560S DVD burner	Optiarc AD-7560S DVD burner	Samsung TS-L633A DVD burner
Screen type/size	14.1in widescreen LCD	12.1in widescreen LCD	12.1in widescreen LCD	12.1in widescreen LCD	15.6in widescreen LCD	16in widescreen LCD	13.3in widescreen LCD	15.4in widescreen LCD	15.4in widescreen LCD
Screen resolution (pixels)	1,366 x 768	1,280 x 800	1,280 x 800	1,280 x 800	1,366 x 768	1,366 x 768	1,280 x 800	1,366 x 768	1,280 x 800
Operating system	Windows Vista Home Premium SP1	Windows Vista Business SP1	Windows XP Pro SP2 (includes Vista Business licence)	Windows Vista Home Basic SP1	Windows Vista Home Edition SP2	Windows Vista Home Basic [Vista Ultimate SP1 supplied]	Windows Vista Home Premium SP1	Windows Vista Home Premium SP1	Windows Vista Home Basic SP1 [64-bit supplied]
PERIPHERALS									
HDMI/eSATA	Yes/No	No/No	Yes/No	No/No	Yes/No	No/No	Yes/Yes	Yes/Yes	Yes/Yes
USB/FireWire	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No
BATTERY/WEIGHT									
Battery type/capacity	10.8V/ 5,800mAh LiIon	11.1V/ 5,405mAh LiIon	14.4V/ 2,569mAh LiIon	14.8V/ 2,770mAh LiIon	14.4V/ 4,375mAh LiIon	11.1V/ 4,400mAh LiIon	14.4V/ 4,800mAh LiIon	10.8V/ 4,800mAh LiIon	11.1V/ 4,400mAh LiIon
Weight (kg)	2.005	1.975	1.4	1.614	2.635	2.519	2.138	2.59	2.691
TEST RESULTS									
UserBench Encode 2009 score	15.83	29.78	30.5	13.04	30.36	24.76	32.46	28.93	34.38
- Audio component score	13.71	21	21.76	11.69	21.46	18.32	22.99	20.48	24.27
- Audio scores (min:sec/MB/s)	3:27/3.13	2:15/4.80	2:10/4.97	4:03/2.67	2:12/4.90	2:35/4.18	2:03/5.25	2:19/4.68	1:57/5.54
- Video component score	17.76	42.14	42.46	14.19	42.86	32.87	45.65	40.75	48.59
- Video scores (min:sec/fps)	3:48/32.81	1:36/77.85	1:35/78.45	4:46/26.22	1:34/79.17	2:03/60.73	1:28/84.33	1:39/75.28	1:23/89.76
UserBench Image 2006	4:42	3:15	3:11	5:46	3:22	3:03	3:10	3:15	3:10
UserBench Security VR 2007	5:46	3:50	3:24	7:40	5:02	5:06	3:22	4:23	DNR
UserBench HL2:LC 2008 (640 x 480)	17.4	31.2	DNR	17.6	77	55.7	54.8	89.8	90.2
UserBench Battery 2008	4:55	3:55	3:22	3:00	3:50	2:18	1:16	2:42	1:57

Please note that in some instances, the specifications of test notebooks supplied to *PC User* differ from the models sold at retail. Where specs differ, the parts used in our test models are indicated by square brackets [ ]. DNR – did not run.

ACER ASPIRE TIMELINE 4810T

PRICE $1,699 / **CONTACT** ACER / **PHONE** 1300 366 567 / **WEB** www.acer.com.au

The Aspire 4810T raises the question: just how much do you value portability and battery life? We often rave about the latter feature because if a notebook can't last a decent length of time, it's hardly suitable for the job of an ultraportable. The 4810T is one of the new breed of CULV notebooks that, at least in this case, delivers stellar battery life. However, it comes at the

significant cost of performance. The Core 2 Solo U3500 processor is basically half as fast as the best models in this group, some of which are cheaper than this unit. The 4810T has some excellent features including a 320GB hard drive, HDMI output and a slot-loading DVD burner, but this won't ever be a speed machine. It's a also touch over 2kg, so it's not as light as you might think.

Being the most expensive model in this group means you'd expect it to deliver on most fronts; however, compare this to the Vostro 1220 and it starts to pale.
PC User says: Brilliant battery life; ordinary application speed.

70%

MSI CX600

PRICE $1,399 / **CONTACT** MSI / **PHONE** (02) 9748 0070 / **WEB** http://au.msi.com

Unfortunately, the CX600 is a case of 'we test one thing, you buy something else'. The processor, hard drive and operating system MSI supplied to us in our test unit differ from what you'll get. From our understanding, you'll get a bigger hard drive, a lesser operating system and the CPU will be a sideways shift. Still, we can only review what we've got

and based on that, the CX600 doesn't rate highly. The reason? Despite a six-cell battery, it could only deliver 1 hour 16 minutes of runtime. We put that down to the SiS 672DX chipset. That said, the ATI Radeon HD 4330 graphics delivered 55.7fps on *Half-Life 2* at 640 x 480 pixels, so some gaming isn't out of the question. Even so, the overall application

performance here isn't all that good and the T4200 processor would only be a minor improvement.
PC User says: Poor battery life and average specs kill this one off.

55%
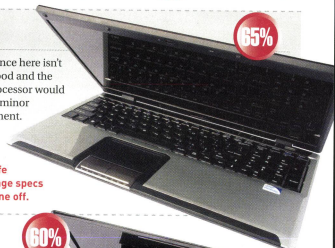
HP PAVILION DV2-1001AU

PRICE $1,199 / **CONTACT** HP / **PHONE** 13 23 47 / **WEB** www.hp.com.au

HP euphemistically (or maybe optimistically) calls this an 'entertainment' notebook PC. We can't figure out why. There's no optical drive, the AMD Neo processor is only one step up from netbook performance, the battery life can't even last 2 hours, and the Radeon X1270 graphics couldn't handle gaming if your

life depended on it. The one thing it has going for it is its 1.6kg weight. Still, even with its slower performance, MSI's X320 makes more sense with its 2 hours 43 minutes of battery life. We're quickly coming to the conclusion that the new CULV trend is going to offer little for consumers except overpriced,

under-performing notebooks and this Pavilion notebook isn't helping that view.
PC User says: If you see this notebook, give it a wide berth.

60%

ASUS U50VG

PRICE $1,799 / **CONTACT** ASUS / **PHONE** 1300 278 788 / **WEB** www.asus.com.au

We thought we'd seen the best of this group in Samsung's R610 (on page 50), but when you come in as the cheapest notebook, offer the best application performance and battery life, you're looking at a winner. The U50Vg is a corker of a notebook, with a big 500GB hard drive, excellent application speed and 3-hour plus battery runtime. Overall, we were slightly disappointed with this group, particularly given what you can get for under $1,700, but there's little wrong with this unit. Built-in HDMI and eSATA ports and 2.5kg

weight help tick all the right boxes, although big-time gaming speed is missing. Still, given what else is here, we're happy to forego that. With application speed 4.5 times faster than a netbook, there are plenty of reasons to consider traditional notebook options. Rarely does one notebook deliver the trifecta of speed, battery and price, but ASUS has managed that quite nicely with the U50Vg.
PC User says: Fastest performance, best battery life and the lowest price.

90%

PC USER BEST BUY

SAMSUNG R610

PRICE $1,999 / **CONTACT** SAMSUNG / **PHONE** 1300 362 603 / **WEB** www.samsung.com/au

Samsung has roared back into the Australian notebook market with some cracking notebooks, of which the R610 is potentially the best. In any case, only the U50Vg stood in the way of this one getting top honours. One of two in this group under $2,000, there are plenty of features to like — the biggest screen, the equal largest hard drive and the most memory. Intel's Core 2 Duo P8600 processor did well in most tests. Add in that roomy 500GB

hard drive, the 64-bit version of Vista Home Premium, an HDMI output and 2 hours 42 minutes of battery life, and it's a decent performance notebook. Weight comes in at 2.76kg and there's even some basic gaming speed with the GeForce 9200M GS graphics chip. This is another notebook that shows you don't

really need to spend $2,500 to get a decent performer.

PC User says: Apart from the U50Vg, this one is better than the others in this group.

ASUS F6VE

PRICE $2,199 / **CONTACT** ASUS / **PHONE** 1300 278 788 / **WEB** www.asus.com.au

The F6Ve is a neat, compact model and although it can't quite match the R610 or U50Vg for value, it doesn't do too badly otherwise. Application speed was a bit down due to its mid-range Core 2 Duo T6400 processor, and while the runtime of 2 hours 7 minutes wasn't too bad in this group, in the overall scheme of

things it's comparatively poor. What was more impressive were the extra features included — FireWire, eSATA and HDMI. The ATI Radeon HD 4570 graphics chip even pushed *Half-Life 2* to 74fps, which is a decent result, and the 320GB hard drive is good value. The 13.3in chassis gave this one the lightest weight of the

group at 2.23kg. However, you'd only really consider this one if you needed eSATA, FireWire support and the smaller chassis, otherwise the R610 or U50Vg is better all-round value.

PC User says: Not bad, but the R610 and U50Vg do more for less.

ALL-ROUNDERS UNDER $2,500: HOW THEY COMPARE

Model	ASUS F6Ve	ASUS U50Vg	HP EliteBook 6930p	Pioneer DreamBook M86	Samsung R610
Price	$2,199	$1,799	$2,499	$2,499	$1,999
SPECIFICATIONS					
Processor	2GHz Intel Core 2 Duo T6400	2.53GHz Intel Core 2 Duo P8700	2.4GHz Intel Core 2 Duo P8600	2.1GHz Intel Core 2 Duo T6500	2.4GHz Intel Core 2 Duo P8600
Memory	2GB DDR2	2GB DDR2	2GB DDR2 (64MB shared)	2GB DDR2 RAM	4GB DDR2 RAM
Graphics chip	ATI Mobility Radeon HD 4570	Nvidia GeForce G105M	Intel Mobile 4-series Express (integrated)	Nvidia GeForce GTX 260M	Nvidia GeForce 9200M GS
Hard drive	320GB Seagate ST9320320AS	500GB Seagate ST9500325AS	160GB internal drive [80GB Intel SSDSA2MH080GI SSD supplied]	320GB Fujitsu MHZ2320BH G2	500GB Seagate ST9500325AS
Optical drive	Matsushita UJ870BJ DVD burner	Matsushita UJ862AS DVD burner	Optiarc AD-7561S DVD burner	Samsung TS-L633A DVD burner	Samsung TS-L633B DVD burner
Screen type-size	13.3in widescreen LCD	15.6in widescreen LCD	14.1in widescreen LCD	15.6in widescreen LCD	16in widescreen LCD
Screen resolution (pixels)	1,280 x 800	1,366 x 768	1,280 x 800	1,920 x 1,200	1,366 x 768
Operating system	Windows Vista Home Premium SP2	Windows Vista Home Premium SP1	Windows XP Professional SP2 (includes Vista Business licence)	Windows Vista Home Basic	Windows Vista Home Premium SP1 (64-bit)
PERIPHERALS					
HDMI/eSATA	Yes/Yes	Yes/Yes	No/No	Yes/Yes	Yes/No
USB/FireWire	Yes/Yes	Yes/No	Yes/Yes	Yes/Yes	Yes/No
BATTERY/WEIGHT					
Battery type/capacity	11.1V/4,800mAh LiIon	11.25V/5,600mAh LiIon	10.8V/5,092mAh LiIon	14.8V/4,400mAh LiIon	11.1V/5,200mAh LiIon
Weight (kg)	2.229	2.536	2.311	3.262	2.763
TEST RESULTS					
UserBench Encode 2009 score	28.18	36.22	DNR	29.09	34.07
- Audio component score	19.88	25.85	DNR	20.45	24.21
- Audio scores (min:sec/MB/s)	2:23/4.54	1:50/5.90	DNR	2:19/4.67	1:57/5.53
- Video component score	39.85	50.41	DNR	41.33	47.71
- Video scores (min:sec/fps)	1:41/73.62	1:20/93.13	DNR	1:38/76.36	1:25/88.13
UserBench Image 2006	3:33	DNF	2:36	3:27	3:04
UserBench Security VR 2007	4:41	4:12	2:30	3:50	DNR
UserBench HL2:LC 2008 (640 x 480)	74.1	49.8	42.9	83.9	50.5
UserBench Battery 2008	2:07	3:16	1:49	1:46	2:42

Please note that in some instances, the specifications of test notebooks supplied to *PC User* differ from the models sold at retail. Where specs differ, the parts used in our test models are indicated by square brackets [ ]. DNF - did not finish this test. DNR – did not run. DNF – did not finish.

PIONEER DREAMBOOK M86

PRICE $2,499 / **CONTACT** PIONEER COMPUTERS / **PHONE** 1300 883 218 / **WEB** www.pioneer.net.au

The M86 is a strange beast. It combines the best graphics chip this roundup — Nvidia's GeForce GTX 260M — with a mid-range Core 2 Duo T6500 processor. This gave it the best gaming in this group, which admittedly, isn't saying much. The $3,499 M57T (see page 52) is a good example of what can be done when you combine a fast CPU with even a mid-range graphics chip. The M86 also delivers lots of extras, with FireWire, eSATA and HDMI all ready to go. The 15.6in widescreen LCD features 1,920 x 1,200-pixel (better than Blu-ray) resolution, but the unit only comes with Vista Home Basic. Unfortunately, the battery life was just 1 hour 46 minutes in our testing. At 3.2kg, it's also one of the heaviest units we tested.

PC User says: A liquorice allsorts of a model, but ultimately doesn't do enough.

70%

HP ELITEBOOK 6930P

PRICE $2,499 / **CONTACT** HP / **PHONE** 13 23 47 / **WEB** www.hp.com.au

In our view, there's not much that's elite in this model. We had some problems testing, but the UserBench and Security benchmarks cracked on. Unfortunately, HP delivered our test unit with an 80GB Intel SSD instead of the 160GB hard drive you'll get for this price. But even so, 160GB? That's nowhere near good enough at this price. The weight at 2.3kg isn't bad, but the big battery delivered just 1 hour 49 minutes in our testing, which is also nowhere near good enough. Intel's Core 2 Duo P8600 is about the best thing inside this 14.1in chassis, but at this price, we'd want a lot more elsewhere to justify it.

PC User says: Needs a bigger hard drive and better battery life.

65%

LENOVO THINKPAD X200

PRICE $2,799 / **CONTACT** LENOVO / **PHONE** 1300 557 073 / **WEB** www.lenovo.com.au

We couldn't split the Samsung X460 (below) and the X200 apart. They're both ultraportables, but they aim at opposite ends of the spectrum. The X200 aims to be the lightweight yet powerful performer, and although it lacks an optical drive, it's full of beans otherwise. The UserBench Encode score was excellent, but given the tiny 1.5kg weight, the 3 hours 29 minutes battery life looks even better. There are few fancy extras (no HDMI or eSATA), but all the standard Wi-Fi/USB features mean you don't miss too much. The 250GB drive is the same as Lenovo's bigger T400s (see page 52), as is Vista Business. If you want an ultraportable and don't want to mess with a half-baked CULV or optical drives, this'd be our first port of call. Sony's VGNZ46GDU leaves this one behind for speed, but if you don't need an onboard DVD burner, you can save $700 and still get an impressive package here.

PC User says: A cracker of an ultraportable — light, fast and good battery life.

85%

PC USER BEST BUY

SAMSUNG X460

PRICE $2,999 / **CONTACT** SAMSUNG / **PHONE** 1300 362 603
WEB www.samsung.com/au

The X460 comes in just under $3,000, but it does so with some justification. The 2.66GHz Core 2 Duo P9600 processor delivered a UserBench Encode score of 38.33, which is a very impressive effort for an ultraportable under 2kg, although it was pipped at the post by Sony's VGNZ46GDU. You also get a 14.1in widescreen chassis, 4GB of memory and a roomy 320GB hard drive. There's even an HDMI output for the DVD player to make the most of its entertainment value. Despite the weight, it includes a big 5,200mAh six-cell battery, although the battery life of 2 hours 51 minutes is just adequate. That said, only the ThinkPad X200 could do better in this group. It's an LED backlit model, so you could easily drop the screen brightness to save battery life. It's not cheap, but it compares well against that VGNZ46GDU.

PC User says: A classy ultraportable with speed to burn.

85%

PC USER BEST BUY

SONY VAIO VGNZ46GDU

PRICE $3,499 / **CONTACT** SONY / **PHONE** 1300 137 669 / **WEB** www.sony.com.au

80%

In what has to be a first for any notebook roundup I've done over the last 15 years or so, an ultraportable has taken out the top benchmark result. The VAIO's UserBench Encode score of 39.53 is the fastest we've seen from any notebook so far, thanks largely to its 2.8GHz Core 2 Duo P9700 processor and 6GB of memory, which is enough to give Windows Vista Business a real hurry up. It features a Performance and Stamina switch. All our testing

was with the Performance setting, so we'd expect some serious improvement on the 2 hours 50 minutes of battery life when using the Stamina setting at the expense of some of that lightning speed. This was the only model here under 1.5kg, yet came with lots of neat extras including a 1,600 x 900-pixel screen, HDMI and FireWire. Did we mention it was quick? The only real problem is the price: it's $700 more than the

Lenovo X200. There's no doubting the pedigree of this notebook — it's straight from the top-drawer. Whether or not you'll get your money's worth is another question.
PC User says: The best damn ultraportable we've seen, but not good value.

LENOVO THINKPAD T400S

PRICE $2,899 / **CONTACT** LENOVO / **PRICE** 1300 557 073 / **WEB** www.lenovo.com.au

The T400s is a touch expensive for what it delivers. Our test unit came with only a 120GB hard drive and the application speed of the Core 2 Duo P9400 was a little whacky in our testing. The UserBench Encode score was surprisingly low on audio encoding, but still reasonable on video conversion — we can't figure out why. Elsewhere, its

performance was improved, but not as good as expected. The six-cell battery is a 3,900mAh type that didn't bode well for battery life, returning just 2 hours 16 minutes. The inclusion of HDMI and eSATA help things along, as does the low 1.78kg weight. However, you can't get that weight along with a DVD burner and 13.3in screen without

some compromise, and unfortunately, it's the battery that seems to cop the brunt. We'd pick Samsung's X460 first.
PC User says: Probably better than our review unit implies, but too pricey.

70%

PIONEER DREAMBOOK LIGHT 9223 CULV

PRICE $1,999 / **CONTACT** PIONEER COMPUTERS / **PHONE** 1300 883 218 / **WEB** www.pioneer.net.au

Pioneer tried hard with this CULV notebook, but as we mentioned previously, we can't see a big future for the market based on what we've seen so far. The 9223 combines Intel's Core 2 Solo U2700 processor with a 128GB A-data SSD. This gives the unit an air of ruggedness, but our review model had a bit of an engineering sample look about

it, so we'll hold off on judging that aspect for the time being. You get a 13.3in widescreen LCD and a DVD burner, but the problem here is the processor. Its performance is only one step up from Atom/netbook level and even a dual-core Celeron can almost double it for speed. The battery life wasn't quite brilliant either — the 4,300mAh Lithium

Ion battery returned 2 hours 44 minutes, which is a fair result, but not stellar. We'd go with Dell's Vostro 1220 and save $600.
PC User says: There's not enough here to hold it together at $1,999.

65%

PIONEER DREAMBOOK POWER M57T

PRICE $3,499 / **CONTACT** PIONEER COMPUTERS / **PHONE** 1300 883 218 / **WEB** www.pioneer.net.au

70%

This was the only big-screen gaming notebook we saw in the roundup, although it didn't have the best graphics chip we saw — that honour went to the DreamBook M86's GeForce GTX 260M. However, the GeForce 9800M GT here delivered better overall gaming speed (nearing 120fps on Half-Life 2 at 640 x 480 pixels) due to a faster processor. Remember, gaming speed

equals the graphics chip plus the CPU. Interestingly, the Sony VGN246GDU turned in a faster UserBench Encode score, thanks to a quicker Core 2 Duo P9700 processor. Elsewhere, the big 17in widescreen LCD with its 1,920 x 1,200-pixel resolution is pretty decent, and with HDMI along with eSATA and FireWire, you've got lots of extras to play with, especially entertainment-wise. Still, we'd have liked a

bigger hard drive, given the $3,500 price tag. With the horsepower on offer, it's not surprising the six-cell battery didn't last longer than 1 hour 37 minutes.
PC User says: This one was as good as we saw for gaming, but it's hard to say it's worth it.

What is CULV?

CULV (Consumer Ultra-Low Voltage) notebooks are being pitched as the next big thing after netbooks. They're being billed as lightweight and portable PCs that offer bigger screens and keyboards than netbooks, as well as faster performance. The problem we've found is that they play in the same price bracket as mid-range Core 2 Duo notebooks, but only deliver around half the application performance. So far, CULV battery life has also been a bit of a mixed bag, especially compared to the previously mentioned mid-range models. There are plenty more CULV models due to arrive in the coming months, but from the ones we've seen so far, we can't help but think CULV notebooks are a little overrated. Still, we'd be more than happy for upcoming models to prove us wrong!

ULTRAPORTABLES UNDER $3,500: HOW THEY COMPARE

Model	Lenovo ThinkPad T400s	Lenovo ThinkPad X200	Pioneer DreamBook Light 9223 CULV	Pioneer Dream Book Power M57T	Samsung X460	Sony VAIO VGNZ46GDU
Price	$2,899	$2,799	$1,999	$3,499	$2,999	$3,499
SPECIFICATIONS						
Processor	2.4GHz Intel Core 2 Duo P9400	2.4GHz Intel Core 2 Duo P8600	1.3GHz Intel Core 2 Solo U2700	2.53GHz Intel Core 2 Duo T9400	2.66GHz Intel Core 2 Duo P9600	2.8GHz Intel Core 2 Duo P9700
Memory	2GB DDR2 (64MB shared)	2GB DDR2 (64MB shared)	4GB DDR2	4GB DDR2	4GB DDR2	6GB DDR3
Graphics chip	Intel Mobile 4-series Express (integrated)	Intel Mobile 4-series Express (integrated)	Intel Mobile 4-series Express (integrated)	Nvidia GeForce 9800M GT	Nvidia GeForce 9200M GS (256MB)	Intel Mobile 4-series Express (integrated)
Hard drive	250GB SATA II [120GB Toshiba MK1229SSG supplied]	250GB Hitachi HTS543225	128GB A-data SSD	320GB Seagate ST9320421AS	320GB Samsung HM320JI	320GB Hitachi HTS723232
Optical drive	Matsushita UJ-862AC DVD burner	None	Toshiba 8x DVD burner [LG GSA-T50N DVD burner supplied]	Optiarc AD-7560S DVD burner	Samsung TS-U633A DVD burner	Matsushita UJ862AS DVD burner
Screen type/size	13.3in widescreen LCD	12.1in widescreen LCD	13.3in widescreen LCD	17in widescreen LCD	14.1in widescreen LCD	13.3in widescreen LCD
Screen resolution (pixels)	1,440 x 900	1,280 x 800	1,366 x 768	1,920 x 1,200	1,280 x 800	1,600 x 900
Operating system	Windows Vista Business SP1	Windows Vista Business SP1	Windows Vista Home Premium SP1	Windows Vista Home Premium SP1	Windows Vista Home Premium SP1	Windows Vista Business SP1
PERIPHERALS						
HDMI/eSATA	Yes/Yes	No/No	No/No	Yes/Yes	Yes/No	Yes/No
USB/Firewire	Yes/No	Yes/Yes	Yes/No	Yes/Yes	Yes/No	Yes/Yes
BATTERY/WEIGHT						
Battery type/capacity	11.1V 3,900mAh LiIon	10.8V/5,200mAh LiIon	10.8V/4,300mAh LiIon	14.8V/4,400mAh LiIon	11.1V/5,200mAh LiIon	10.8V/5,400mAh LiIon
Weight (kg)	1.781	1.544	1.71	4.153	1.912	1.458
TEST RESULTS						
UserBench Encode 2009 score	26.51	33.74	13.81	36.73	38.33	39.53
- Audio component score	16.7	23.89	11.74	25.49	26.96	27.63
- Audio scores (min:sec/MB/s)	2:50/3.81	1:59/5.46	4:02/2.68	1:51/5.82	1:45/6.16	1:43/6.31
- Video component score	45.12	47.48	15.77	53.19	54.46	56.65
- Video scores (min:sec/fps)	1:29/83.35	1:25/87.71	4:17/29.13	1:16/98.26	1:14/100.6	1:11/104.65
UserBench Image 2006	3.32	3.19	7:48	3:07	2:35	2:37
UserBench Security VR 2007	3:42	3:36	DNR	DNR	3:38	DNR
UserBench HL2:LC 2008 (640 x 480)	29.1	25.9	13.7	119.1	61.4	66.7
UserBench Battery 2008	2:16	3:29	2:44	1:37	2:51	2:50

Please note that in some instances, the specifications of test notebooks supplied to *PC User* differ from the models sold at retail. Where specs differ, the parts used in our test models are indicated by square brackets [ ]. DNR – did not run.

Get started with
Windows 7

Rose Vines outlines what you need to know before installing Windows 7, and reveals how to use the operating system's best new features.

Warning: before you install Windows 7.
You may be tempted to rush in and install Windows 7 Release Candidate (RC) from this month's cover DVD straight away. Don't. There are a few things you must do first.

❶ Read the Windows 7 installation guide we've included on this month's cover DVD. Just follow this month's 'Using this month's DVD' instructions on the back cover of the disc, selecting 2 to launch the main *PC User* DVD interface. You'll find the Windows 7 guide in the Windows Resource Kit section. Alternatively, there are Windows 7 installation instructions on Microsoft's web site at **http://tinyurl.com/crxlpq**.

❷ Back up all of your data files, not forgetting your email, bookmarks and other files that aren't located in your main Documents (or My Documents) folder. Microsoft has a backup guide at **http://tinyurl.com/dk856r**. Remember, a 'clean' installation of Windows will wipe everything on that hard drive (or partition), so anything you don't back up will be gone for good.

❸ Get a Windows 7 RC product key by following the instructions at **http://tinyurl.com/crxlpq** before you start installation. You won't be able to complete the Windows 7 installation without this key, so be sure you get one (and print it out) before you begin.

❹ To install Windows 7, it's recommended that you boot from this month's cover disc and do a clean install, reformatting the hard drive so you'll lose everything — your data files, Windows settings and application installations. If that concerns you, you could create a ghost image of your entire hard disk. An even safer option is to install Windows 7 RC within a virtual machine using our PC User Virtual Machine Shop 2 SE software on this month's cover. This allows you to keep your main Vista or XP installation completely intact, switching to Windows 7 and back whenever you like. See Darren Yates's tutorial

Windows 7's knockout sleeper feature is search connectors, which integrate Twitter, Flickr and other searches into Windows. Grab the Flickr one from **http://tinyurl.com/nywwb7**.

Plug in a USB memory stick and Windows 7 is smart enough to offer the option of using it as a backup drive.

on page 62 for more details.

Also note that the Windows 7 RC will expire on June 1, 2010, and bi-hourly shutdowns will begin in March 2010, which is another good reason to install Windows 7 in a virtual machine. When you're finished with it, you can just delete its virtual machine files and Windows 7 RC will be gone.

_NEW FEATURES

Windows 7 is a workhorse that pulls the best performance from even modest hardware. At the same time, it's something of a show pony. Best of all, it's smart. It introduces new ways of doing old tasks that will make our computing lives considerably less frustrating and more enjoyable.

If you're a Vista user, you'll find yourself ahead of the game in learning how to use Windows 7. The interfaces are similar, but Windows 7 adds refinements that make many tasks easier. The new feature that's likely to take the longest to learn is the introduction of Libraries, consolidated views of related files that make it much easier to find, save and back up your data.

If you're still living in the pre-Vista world, you're in for quite a ride. Everything from the Start menu to file tagging, from networking to file management is entirely different in 7.

Our visual guides to the desktop, taskbar, Libraries and HomeGroups will help you get oriented and we have plenty of tips to make you feel at home in the new world.

Concerned about the security of files on a USB stick? Use portable BitLocker Drive Encryption to protect them.

Stream your media files from your home computer to wherever you roam in the world, via the internet.

_WINDOW MANAGEMENT

Windows 7 adds new elements called Snap, Peek and Shake for the management of program windows.

Drag a program window to the top of the screen to open it to occupy the entire screen; drag it to either side of the screen and it will resize to occupy half of the screen; drag the window away from the screen edge and it will resize. This is Aero Snap in action.

To get a handle on Aero Shake, grab a window by its title bar and give it a shake with the mouse. All of the other open windows will fold neatly into the taskbar,

minimising themselves. Give the open window another shake to restore the minimised windows.

Aero Peek lets you glimpse your desktop through any overlaying windows simply by hovering over the small semi-transparent area in the bottom-right of the desktop. You can also hover the mouse pointer over a program icon in the taskbar, then hover it over the program thumbnail to display that program's window while making all others fade into transparency. All that will remain of the transparent windows is an outline to show the space they occupy.

_DISABLING SNAP

Aero Snap will be useful to everyone except

those who like to shove windows half off the desktop in order to clear some working room. If that's you, you can disable Snap:
❶ Click Start —> 'Control Panel' —> 'Ease of Access'.
❷ Click 'Change how your mouse works'.
❸ Tick 'Prevent windows from being automatically arranged when moved to the edge of the screen'.
❹ Click OK and close the Control Panel.

_START SEARCH

Instead of clicking through multilevel menus to find your programs or digging through folders to find your files, have Windows 7 do the work for you courtesy of the search box on the Start menu. Click the Start orb and

OLDIES REVAMPED

A

Paint has been part of Windows since its first days, while WordPad made its debut in Windows 95. Throughout the years, both of these mini applications have languished mostly unchanged. In Windows 7, each of them gets a major cosmetic upgrade through the addition of the Ribbon — the updated interface featured in Office 2007. Apart from cosmetic changes, Paint gains new preset shapes and a collection of brushes; WordPad can now save in OpenDocument text and Office Open XML formats.

The Action Center replaces Vista's Security Center. Action Center alerts are displayed via a flag icon and text alerts in the notification area. You can click an alert to open the Action Center or open it via the Control Panel. From the Action Center you can monitor your security settings, fix problems with your system, run System Restore and change User Account Control sensitivity.

The Calculator gets a far more radical makeover than the other built-in apps. When you first open it, it doesn't look like much. Click the View menu or tap Alt-2, Alt-3 or Alt-4 to check out the scientific, programmer and statistical calculators. Also available from the View menu are slide-out panels featuring unit conversions, date calculations and worksheet templates. The latter includes mortgage, vehicle lease and fuel consumption worksheets.

start typing in the box. Results will appear instantly, organised into categories: Programs, Documents, Pictures, Music, and so on. Each category header in the search results list displays the number of matching files in that category. Click the 'See more results' link at the bottom of the list to view all matching items, or click any of the category headers to view matches within their category.

_SEARCH & LAUNCH

When you perform a search from the Start menu, matching programs are placed at the top of the list, with the first result — usually the closest match — selected at the top. This makes it easy to find the program you want and then hit Enter to launch it.

Try using the search box to locate programs whose names you may not know. For example, a search for **repair** or **uninstall** will unearth a number of Windows utilities along with program-specific repair and uninstallation utilities.

_SEARCH ACROSS A HOMEGROUP

HomeGroups make it a snap to share files and printers across a network. Windows 7 prompts you to set up a HomeGroup during installation and any Windows 7 computer can join a HomeGroup by providing the correct password.

Searches initiated from the Start menu or anywhere else will include matching results from your HomeGroup computers. If you share a folder on one computer across the HomeGroup, you'll be able to find files in that folder any time the computer is switched on, even if a user other than the owner of the folder is logged in.

_THROTTLE BACK UAC PROMPTS

Invasive User Account Control (UAC) prompts were one of the big bugbears for Vista users. Although UAC makes it much harder for hackers to alter or damage applications or launch unwanted programs, those prompts were enough of a headache that many Vista users simply turned UAC off.

Windows 7 is far more restrained in its prompts and it's likely you'll be happy to accept the default UAC settings. If you want to lessen the number of prompts, disable them altogether or ramp them up so your computer's security is tight, use the new UAC slider:
❶ Click Start, type **uac** and hit Enter to open 'User Account Control Settings'.
❷ Move the slider to the desired level.

_CREATE A REPAIR DISC

Windows 7 includes a utility to create a bootable system repair disc, which you can use to fix your system, should you find yourself unable to launch Windows. To create the disc, insert

A visual guide to 7's desktop

Slick looks. 7 is dressed to kill. It comes with a beautiful collection of wallpapers, with several country-specific sets including one for Aussie users. Right-click an empty spot on the desktop and select Personalize to use one of the pre-crafted, multi-wallpaper themes.

Tweaked Start menu. The Start menu is populated a little differently from Vista and has some cosmetic changes as well. Most interesting is the addition of Jump Lists, indicated by an arrow to the right of a Start menu item. Jump Lists provide application-specific shortcuts, including a list of the documents you've opened recently using an app.

Smarter search. From the search box in the Start menu you can track down programs, documents, contact details, web site addresses and more. The idea is to make programs and data come to you, instead of you having to search for things. This will be familiar to Vista users, but 7 does a much better job of categorising the results. If the item you're after isn't displayed within the Start menu, click 'See more results' to see all matching items.
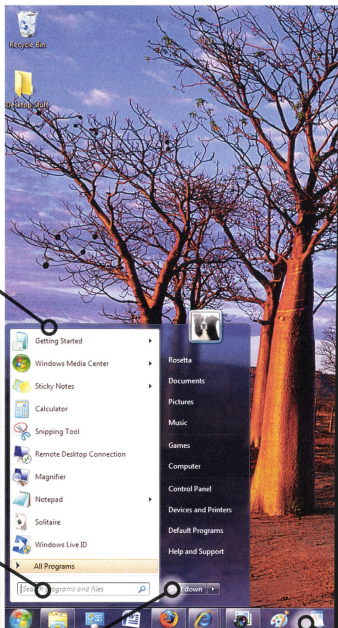
Better power button. Vista's confusing power button has been replaced with a labelled button clearly displaying its function. Right-click the button and select Properties to change the function from Shutdown to Sleep, 'Log Off', 'Switch User', Lock or Restart.
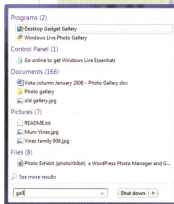
Unshackled gadgets. Vista's Sidebar is dead and only paid mourners turned up at the funeral. The Sidebar Gadgets live on, however, released to sit wherever you position them on the desktop. You can still drag gadgets to the old sidebar area on the right of the screen and they'll neatly tuck themselves in line. The pitiful handful of Microsoft-crafted gadgets available in Vista is the same pitiful handful in 7. Microsoft clearly hopes third-party gadgeteers will fill the gap, but they haven't to date, with most gadgets falling somewhere between pathetic and so-so. You're better off with the Google equivalent, courtesy of Google Desktop Search.

New context options. The desktop context menu, available by right-clicking an empty spot on the desktop, sports several new options. Gadgets lets you add new desktop gadgets. 'Screen Resolution' provides quick access to the resolution controls for your desktop. And if you've chosen to create a slideshow of desktop wallpapers, the 'Next Desktop Background' option lets you see a new wallpaper.
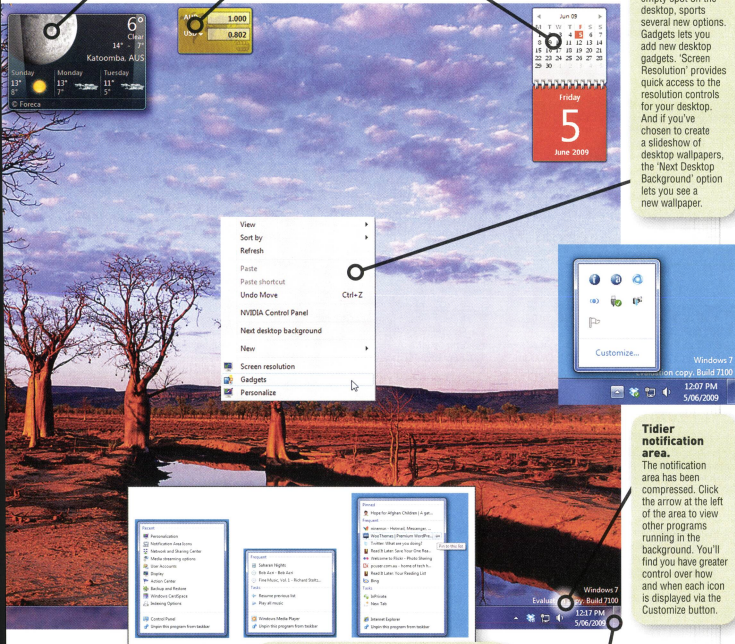
Tidier notification area. The notification area has been compressed. Click the arrow at the left of the area to view other programs running in the background. You'll find you have greater control over how and when each icon is displayed via the Customize button.

Refined taskbar. The distinction between the Quick Launch bar and taskbar program buttons has disappeared in 7. Unlabelled icons represent both the programs you've pinned to the taskbar and those that are currently running. Running programs' icons are highlighted, so you can distinguish between the two. Drag icons to reorder them.

Jump Lists. Right-click any taskbar icon to see the program's associated Jump List. The Jump List contains a list of up to 10 recently opened documents, an option to pin or unpin the program from the taskbar and a launch option. In addition, Jump List-savvy programs, such as Office 2007, Internet Explorer 8 (IE8) and Windows Media Player (WMP), add a Tasks section to the Jump List. There you'll find context-specific tasks, such as starting an 'In Private' browsing session in IE8 or replaying the last track in WMP. It's also possible to pin a document to a Jump List, making it easy to open.

Quick desktop viewing. The 'Show Desktop' icon used to sit in the Quick Launch bar and didn't seem particularly useful. Now it lurks as a small, transparent button on the extreme right of the taskbar. Coupled with 7's Aero Peek feature and the floating desktop gadgets, it becomes more useful. Hover over it to display your desktop and gadgets by rendering overlaying windows transparent; click it to minimise all the open windows.
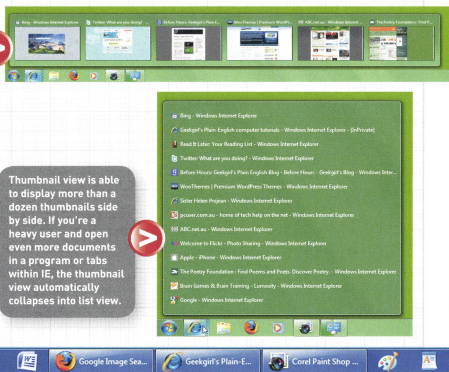
TASKBAR THUMBNAILS

The all-icon taskbar may look a little uninformative at first glance, but float the mouse pointer over the icons and up pops a thumbnail view of each of your open documents. IE8 extends this feature by displaying an individual thumbnail for each tab you've opened in the browser. Hover your pointer over one of the thumbnails to view the window containing that document; click to bring that document to the foreground so you can work on it; click the little Close box that appears on the preview to close the document.

Thumbnail view is able to display more than a dozen thumbnails side by side. If you're a heavy user and open even more documents in a program or tabs within IE, the thumbnail view automatically collapses into list view.

If you'd prefer to have a more descriptive taskbar, it's a simple matter to display labels beside your taskbar icons.
1 Right-click the taskbar and select Properties from the context menu.
2 Click the Taskbar tab of the 'Taskbar and Start Menu Properties' dialog box.
3 From the 'Taskbar Buttons' drop-down menu, select either 'Combine when taskbar is full' or 'Never combine'.
4 To save space, you may wish to tick 'Use small icons'.
5 Click OK.

---

a CD or DVD into a drive and then perform the following steps.
1 Click Start and type **create** .
2 Launch 'Create a System Repair Disc' and follow the prompts.
3 Eject the disc and label it.

_WALLPAPER SLIDESHOW

Windows 7 is well endowed with beautiful wallpaper for your desktop and you can add your own to the collection. The new themes combine wallpapers, fonts, icons and window colours to give your entire desktop a makeover. If you select a theme, your wallpaper will rotate through the theme's collection, or you can advance to the next wallpaper by right-clicking the desktop and choosing 'Next Desktop Background' from the context menu.

To use a theme, right-click the desktop, select Personalize and then click any of the themes. If you'd prefer to pick and choose your own wallpapers:
1 Right-click on the desktop and select Personalize —> 'Desktop Background'.
2 From the 'Picture Location' box, select any of the options other than 'Solid Colors'.
3 Click multiple images, or click to tick each image you want. Note that there are 'Select All' and 'Clear All' buttons at the top-left if you need them.
4 Near the bottom of the window, adjust the 'Picture Position' setting and select how

often the wallpaper should change. Ticking the Shuffle box will display the images in random order.
5 Click 'Save Changes' and close the window.

_STREAM YOUR MUSIC

Windows Media Player (WMP) 12 packs some pleasant surprises. Apart from its nicely minimalist Mini Player Mode and its integration with Windows 7's new Libraries, one of the standout features is its streaming abilities. You can stream your Windows 7 media between PCs on your network, push content from one Windows 7 PC to another, control a remote media library and — the *pièce de résistance* — stream your music across the internet.

Think about it. You can go on the road with your Windows 7-powered notebook and access your complete music library at home via the internet.

That sort of sharing requires some serious security, so streaming is implemented via an online ID provider. You use your online ID with your Windows user account, so that when you log on remotely, your computer will 'recognise' you.
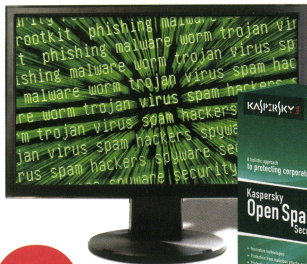
At the moment, there's only one ID provider: Microsoft's own Windows Live ID. In the future, other ID providers may participate. Right now, you'll need to use your existing Live ID or sign up for one in order to use this feature.

This security requirement complicates

the process required to get streaming up and running, but it's a one-off thing so it's no great hardship. Here's how to set up your system for streaming.
1 Open WMP and from the Stream menu, select 'Allow internet access to home media'.
2 You'll be prompted to link an online ID, which first requires you to select an online ID provider.
3 Your browser will open to display the list of ID providers. This is currently limited to Windows Live, so click its link.
4 Download and install the Windows Live ID Sign-in Assistant from the page displayed (make sure you choose the correct version for your computer: 32-bit or 64-bit).
5 When the 'Sign in' dialog box is displayed, sign in using your Windows Live ID (or click the 'Don't have a Windows Live ID?' link to get one).
6 You then need to link this ID by clicking 'Link an online ID' in 'Control Panel' —> 'User Accounts' —> 'Link Online IDs'.
7 Return to the original dialog box and click 'Allow internet access to home media'.
8 If you want, from the Stream menu, click 'Allow remote control of my Player' to allow other computers on your network to push music to your PC.

Repeat this process on your other Windows 7 computers to enable sharing all round. You'll find that the remote computer's media will show up in WMP as another Library (see page 60).

USING WINDOWS 7'S LIBRARIES & HOMEGROUPS

Libraries. File management gets a major new twist, courtesy of Windows 7's Libraries. Libraries provide a centralised view of documents you may have scattered across many folders and even across multiple computers on your network. Windows 7 comes with four standard Libraries: Documents, Music, Pictures and Videos. Each Library may contain files in multiple locations. The standard Libraries start off by tracking files in two locations: a user content folder and a public folder. For example, the Music Library includes files in the My Music folder (\Users\username\ Music) and the Public Music folder \Users\Public\ Music). You can easily add other folders to this list. Although Libraries don't physically contain files (each Library is merely a consolidated view of files in multiple locations), you can save new files to a Library. That's because each Library has a specific folder nominated as the default save location. This is one feature that will save you a huge amount of time and frustration.
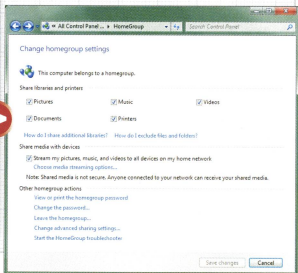
Easy media sharing. Both HomeGroups and Libraries are tightly integrated into Windows 7. You'll find your media libraries are shared by WMP and Windows Media Center. One example of the simplicity HomeGroups bring to file sharing is the way you can share a file or folder — or block it from being shared — via a right-click option; there's no messing about with Properties dialog boxes any more.

HomeGroups. Looking for an excuse to upgrade all your computers to Windows 7? HomeGroups could provide it. HomeGroups are the home networking equivalent of the workgroup concept, but a whole lot easier to use. During installation, Windows 7 detects your network and prompts for its location: home, work or public. If you indicate it's a home network, you'll have the chance to set up a HomeGroup, which involves nothing more than choosing what types of files you'd like to share and jotting down the password. Once you've set up your HomeGroup, any other Windows 7 computer can join simply by providing the password. You'll also be able to add folders from any HomeGroup computer to your Libraries and share USB printers automatically.

Location, location. Your HomeGroup and Libraries appear prominently in file save and browse dialog boxes, making it easy to save to any location on your local computer or on another computer within your HomeGroup.

Try out Windows 7 using a virtual PC
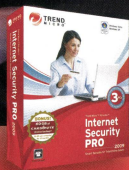
Darren Yates shows how you can try out Windows 7 RC without changing your current PC setup.

The .vmdk files are the virtual hard drive onto which Windows 7 is installed.

By now, you've no doubt seen that we have Microsoft's Windows 7 Release Candidate on the cover disc for you to try out. And while installing it onto a spare PC is the best way to see Windows 7 in operation, it's not always possible or desirable. If you don't have a spare computer to devote to a tryout operating system, or you can't afford to upset the PC you do have, there's an alternative: use what's known as virtualisation.

Virtualisation is basically emulating a computer using software. Instead of requiring a separate hard drive partition or even a separate computer, you install and run Windows 7 as if it were an application running on your existing operating system. The benefits of virtualisation are that no special hard drive partition is required, and no permanent changes are made to your PC. Once you've had enough of Windows 7, you simply delete the virtualisation files from your computer's hard drive and it's gone for good.

_HOW IT WORKS

Using the virtualisation software VMware Player and our exclusive Virtual Machine Shop 2 SE application, you can construct and emulate a computer (a virtual machine) just using software. You then launch that virtual machine in VMware Player and it's as if you have a brand-new computer to play with.

The trick is that it's a computer which essentially runs as an application on your existing Windows operating system. It needs some of your computer's real hard drive space and real system memory, but other than that, it doesn't make any changes to your existing setup.

Virtualisation has a number of advantages over a traditional 'install on a new computer' approach. Firstly, Windows 7 switches to a more restricted phase come March 1, 2010. After that time, you need to restart the operating system every two hours. On June 1, 2010, it won't start at all. So setting up a full computer or dual-boot partition system seems like a lot of effort for an operating system you won't be using for more than about six months. Secondly, you don't need to mess around with hard drive partitions.

Virtual Machine Shop creates a virtual hard drive out of your existing spare hard drive space, allowing Windows 7 to be installed and run without having to make any serious changes to your system. Finally, when you've decided you've had enough, all you need to do is delete the virtual machine files and Windows 7 is gone. And if you happen to get a virus on that virtual machine, it stays on that virtual machine and doesn't transfer to your normal system.

One thing you can't do with a virtual machine is boot up from it — you must boot your standard operating system first and then launch the virtual machine. But that's only a minor annoyance when you consider the advantages.

_WHAT YOU NEED

In order for this to work, you'll need a computer that's already running XP or Vista. You'll also need sufficient memory to be able to run both your host operating system (the one your PC boots up) and the guest operating system (Windows 7, which we'll be running as a virtual machine).
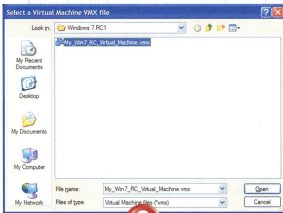
We recommend at least 1.5GB of memory if your host operating system is XP and 2GB if it's Vista. This will ensure both the host and guest operating systems will have sufficient resources to run.

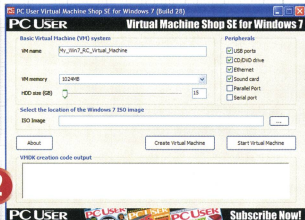In addition, you'll also need hard drive space. You don't need a separate partition,

Windows 7 product key

One important thing to note is that virtualisation doesn't change the operating system's protection measures — you still need a product key to activate your operating system, just as you would if you were installing this onto a proper system. However, in Windows 7's case, you can simply choose to skip the product key section and continue on. Microsoft will give you a 30-day grace period to use the operating system before product activation becomes mandatory. If you choose not to, you can always delete the virtual machine and simply start again.

1 Install VMware Player and Virtual Machine Shop from this month's cover disc on the PC you wish to use to run Windows 7. Leave the cover disc in your PC's DVD drive.

2 Start up Virtual Machine Shop, choose a name for your virtual machine, the amount of system memory to divert (1GB recommended) and hard drive space allocated (15GB recommended). Note that if you already have a Windows 7 ISO image and don't want to use the cover disc to install, you can click the Browse button in the 'ISO image' entry bar and load the location of that image file.

3 Click the 'Create Virtual Machine' button and choose a folder in which to store your virtual machine. After that, click the 'Start Virtual Machine' button, choose the .vmx file for your virtual machine from the folder and click the Open button.
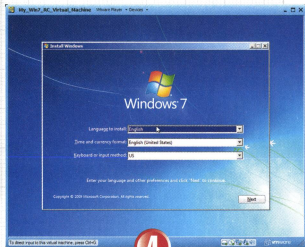
4 VMware Player will then start up and begin installing the Windows 7 operating system from the cover disc. Follow the prompts until installation is complete.

---

just sufficient space on one partition somewhere in your PC to store the virtual machine's working files.

Virtual Machine Shop sets the minimum hard drive space for Windows 7 at 15GB. You can make the virtual hard drive for Windows 7 more than that if you wish, but you'll need at least 15GB somewhere, preferably not on your host operating system partition (usually the C: drive) if possible. Many PCs only have a C: drive, so if this is the case, you'll need to use this partition regardless.

_ INTRODUCING VIRTUAL MACHINE SHOP 2 SE

This Special Edition of our exclusive Virtual Machine Shop 2 software is designed to make it as simple as possible to build your own Windows 7 virtual machine. All you need to do is give your virtual machine a name, choose the amount of system memory you

want to allocate to it and choose how big to make the virtual hard drive.
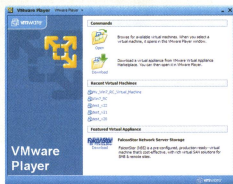
Next, click the 'Create Virtual Machine' button and select the location in which your virtual machine (with its virtual hard drive) will be stored. Once that's done, load the September cover disc into your PC's optical drive, click the 'Start Virtual Machine' button in Virtual Machine Shop and choose the virtual machine you just created.

This will launch VMware Player and up will come your virtual machine. What should also happen is that Windows 7 will begin loading from the cover disc into the virtual machine. At this stage, just follow the prompts and allow Windows 7 to install.

It's important to remember that it's not changing your existing Windows setup — you won't lose your existing operating system, nor will it create a dual-boot setup. This will simply allow Windows 7 to install itself into the virtual machine.

Launch a virtual machine

Once the virtual machine has been created by Virtual Machine Shop, you can start it manually by simply starting up VMware Player and either choosing a recently opened virtual machine from the list, or clicking the Open icon and choosing your own virtual machine from another location.

stepbystep DELETE A VIRTUAL MACHINE

1. Locate the folder in which you chose to store your virtual machine's working files.

2. Use Windows Explorer to delete them. Once that's done, the virtual machine — and all of its files — are gone and the space is made available to your host operating system. It's that simple.

Data transfers between OSes

If you ever wish to copy files from your guest Windows 7 operating system to your host Windows operating system, the easiest way to do this is to use a USB flash drive. When you first plug in your USB drive, it will appear in your host operating system's list of drives. If you go to the top panel of VMware Player and click on Devices, you'll see it appear in the devices list. All you need to do to access it is click on the 'Connect' entry and this will disconnect the flash drive from your host machine and connect it to your virtual machine. You'll then be able to copy files from your Windows 7 virtual machine to the USB drive. When you're done, click on Devices again and this time, choose Disconnect — this disconnects it from the virtual machine and automatically reconnects it to your host operating system. You can then copy the files from the USB flash drive to your host operating system's storage.

If you have a look at where the virtual machine files are stored in Windows Explorer, you'll see that the .vmdk files will begin expanding. These are the virtual hard drives that Windows 7 is being installed into.

_WHAT IT CAN'T DO

While using virtualisation will give you most of the performance available from Windows 7 (there is a small performance loss because Windows 7 has to work through your host operating system), you won't be able to run Aero, as the virtual machine can only employ a standard VGA graphics driver, which doesn't have support for DirectX 9 (this is needed for Aero to work). You also won't be able to play 3D games for the same reason. Otherwise, you'll be able to use and do pretty much everything else with Windows 7, which should certainly be more than enough to give you a good feel for how the operating system works.

If your PC is connected to the internet through a home network, you should find that the virtual machine will also connect itself automatically and you'll be able to use Windows 7's Internet Explorer 8 to surf the web.
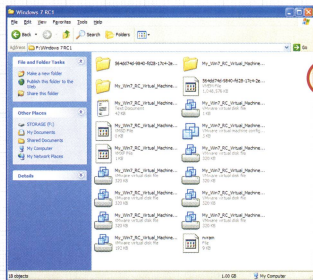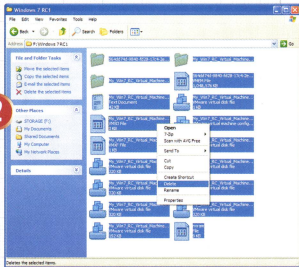
_RUNNING MULTIPLE VIRTUAL MACHINES

The other major benefit of virtualisation is the fact that you can run multiple operating systems at the same time. Normally, to have multiple operating systems on one computer would require you to restart your computer

How fast is a virtual machine?

Because a virtual machine is effectively an operating system that runs through an operating system, there's an extra layer that can cause things to slow a bit. In practice, you should find that you get roughly 75-80% of your PC's normal performance running a virtual machine.

each time you want to switch, and have access to only one operating system at a time. However, with virtualisation, not only do you have your host operating system running, you can also run more than one virtual machine simultaneously. You just need to have sufficient system memory and hard drive space to run them all.

For example, if you're running XP as your host operating system and you want to run Windows 7 and Vista as two virtual machines simultaneously, you'll need at least 512MB of memory for XP and 1GB each for Windows 7 and Vista — that's 2.5GB of RAM or more.
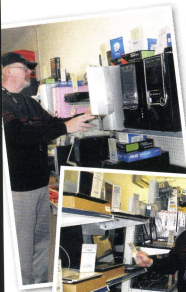
Virtualisation can't do absolutely everything a normal PC can do, but for trying out new software or testing new operating systems such as Windows 7, it's a cheap, easy and fuss-free way of building a virtual computer in seconds.

Reckon SOFTWARE
KEEPS COMPUTER STORE IN TOUCH

WHEN DIRECTOR GORDON HARRIS SAYS FOR HIM TO SUCCEED IN BUSINESS, IT'S VITAL TO DISTINGUISH HIS BUSINESS FROM THE COMPETITORS, *HE MEANS IT.*

Reckon software – Retail Point of Sale and the new QuickBooks Premier QB' series – to track sales, manage inventory, process transactions, and manage the service department.

"It is an excellent platform for us to sell products," says Mr Harris, "and linking POS to QuickBooks gives me complete control of the business."

Australian Computer Resellers has integrated Reckon's Retail POS into QuickBooks enabling Mr Harris, at the close of business each day, to see exactly what products have been sold. The ability to link his accounting software to other programmes in this fashion is a significant benefit to streamlining the company's operations.

It all helps reduce the amount of time balancing the books, enabling staff to spend more time with a customer base whose needs are broadening while their understanding may not be.

Mr Harris notes that while just about every customer has a slightly different need, the underlying trend today is compliance. Increasingly complex ATO regulations have confused many and while most don't necessarily want to understand their obligations, they just want the confidence that "everything is set up right" to comply.

QuickBooks, he notes, fits the bill with its Chart of Accounts, bank reconcilliations and other reporting and financial management tools. As such, Australian Computer Resellers' staff makes sure each software package that leaves the store does exactly what its new owner expects.

"We're trying to make this a one-stop shop," he notes, adding another important aspect of the company's business is its ability to recommend not only what is the best product and service for the job but also what is best for the customer's wallet.

Mr Harris' firm turns over plenty of used and refurbished computers, computers that are purchased in bulk from local schools and government departments. These units are touched up, and if necessary, repaired, then sold for as little as $299. Each package also comes with various warranty and support entitlements giving the consumer complete confidence that not only are they purchasing an efficient and reliable computer but also the confidence that should they have compliments, complaints or questions, Australian Computer Resellers is there to help.

And that, Mr Harris adds, is something you can't always expect from his larger computer chain store competitors.


Australian Computer Resellers is one of 23 computer retailers in and around the Perth suburb of Cannington in which the company is based. Whilst Australian Computer Resellers doesn't have the national footprint of the major electrical retail chains, Harris has built the business on personal service, know-how and not treating customers as if they're just another account number.

"We're one of the only small independent firms [in the area] and if you want to survive you've got to have a good point of service," he says.

Australian Computer Resellers is a full-service computer store. It's been selling new, used, and refurbished computers and accessories since 1993. The company complements its business with troubleshooting, data backup services, repairs, reinstallations, web site hosting and training, amongst others, most notably consulting services.

Mr Harris, who is an accountant by trade, and his wife, Beth, a former award-winning business coach and consultant, have successfully united the company's product offerings with accounting software consulting in a way the larger retailers can't.

The increasing diversification of the company's operations has it relying on a combination of
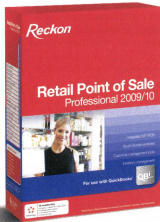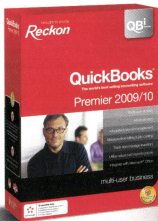
For more information on Reckon Limited's complete line of products and services, visit www.quicken.com.au

FEATURE

Online business options

Trying to set up an online business can quickly plunge you into a confusing world of unfamiliar technology. **Angus Kidman** examines the main options you'll need to consider.

If you read our introductory guide last month, you'll already be familiar with the reasons why setting up an online presence for your business is a sensible step. Once you've made the commitment to getting online, you'll soon be faced with a potentially bewildering array of technical choices and options. The main reasons for setting up a site — letting people know about your products, communicating and interacting with customers, and potentially selling goods and services — are all easily understood in business terms. However, when it comes to selecting the software and services needed to make that a reality, business knowledge takes second place to technical nous.

If you're planning to build your own site, getting to grips with the main terminology is essential. Even if you're going to hire an outside consultant to do most of the work, having a familiarity with the basics will help ensure you get a site that meets your needs. In this article, we'll take a broad overview of the options available to you — we'll examine how to implement some of the more popular options in detail in future instalments. The glossary (see page 67) explains additional technical terms you may be unfamiliar with.

Regardless of whether your online plans are simple or elaborate, don't neglect the question of how the site will be maintained after the initial version is rolled out. No matter how straightforward your initial plans may be, an online presence rarely remains static. Ideally, even if you've used a developer to build your site, you'll want to be able to make simple changes (such as altering address or product details) without major complications or expense.

_BASIC SITES

The simplest kind of site only contains basic information: the nature of your company, the key products, your address and other contact information such as phone numbers. This is often referred to as flat HTML, since the web site doesn't contain any interactive elements — it's essentially a collection of graphics and text. Such web sites are often referred to as brochureware, but they can still have marketing value for your business.
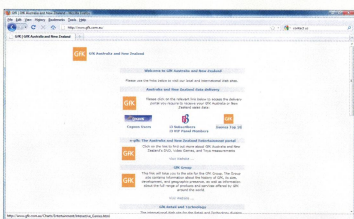
Even a basic site can offer useful information to customers, such as this site for retail sales tracker GFK, which is little more than a series of links to other related resources.
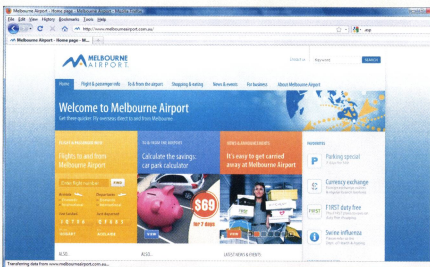

Database-driven systems can be used for highly complex sites such as Melbourne Airport.

✳ **Pros.** Setting up a flat HTML site is fairly simple — you can even design one yourself using a standard word processing package. Virtually any hosting company or ISP can run one of these for you at minimal cost, and you won't need any complex technology extensions or other features.

✳ **Cons.** A flat HTML site is unlikely to stand out from the crowd and you could argue that at this level, making sure you're accessible in

directory services such as the White Pages and Google Maps is more useful than spending time on a simple site. Also, maintenance is likely to be a bit of a chore on this type of site.

✳ **Key technologies.** You'll need some sort of editing system to create and design your pages, and graphic design software to create any onscreen graphics required. Uploading your site will often involve FTP software,
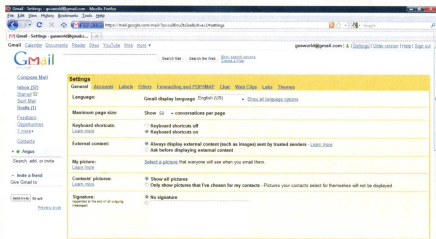
Gmail utilises AJAX to provide a better user experience.

though some web site design packages integrate this functionality as well.

_DATABASE-DRIVEN SITES

The vast majority of sites that involve more than a handful of pages use a database-driven model. Essentially, this involves two components: a type of database (usually SQL based), which is used to store the basic content for the site, and a type of rendering system to convert that content into HTML pages to be viewed via a web browser. That will typically involve the use of templates for different parts of the site, which will contain common elements for design consistency as well as unique features (product information pages will look different to a Contacts page or a company history page, for instance).

While that might sound like a complicated way to go about things, the approach offers several advantages. Because the site design is essentially independent of the content, you can quickly make changes to the overall design — such as adding a new link or section — without having to manually edit every single page on the site. Database-driven systems are also much easier to index, making site searching simple, and the same database components can readily be adapted if you want to offer ecommerce features to your customers.

※ **Pros.** Database-driven systems are well understood, so there's plenty of free and paid expertise on how to manage them. Adding new content or altering your design is relatively easy, as is scaling up the site if you start getting major amounts of traffic.

※ **Cons.** The initial setup of the web site can be more complex. Because the site will rely

on multiple components, which might run on separate servers, it may be more vulnerable to downtime, though this shouldn't be a problem with a well-organised provider.

※ **Key technologies.** You'll need database and rendering software, which will generally run on a server at your hosting company. The exact requirements for your business will vary depending on what you want to achieve and the preferred technologies of your hosting provider.

_CMSes & COMMUNITY SITES

Content management systems (CMSes) are a particular sub-type of database-driven sites, but one that's gained increasing prominence in recent years. As the name suggests, a CMS is designed to manage all the elements required on a web site. While it can run as a separate desktop program, most modern CMS packages use a web browser as their main interface. Authorised users simply sign in via the internet in order to make changes and additions as needed.

This kind of CMS has gained particular prominence with the rise of blogs in recent years. Virtually all blog sites make use of a CMS, meaning the author doesn't have to do much more than decide on the look of their site and then enter text using a web-based interface. The same systems also make it easy for other visitors to offer comments and suggestions on individual posts. This can be a useful way of building up an audience for a business site and a community around your products, but it's generally prudent to use a model that requires all the comments to be moderated to eliminate any spam, offensive remarks and deliberate troublemakers.

Tech terms

The world of site design and hosting is filled with acronyms. Here are some of the more common ones you'll encounter.

AJAX (Asynchronous JavaScript and XML). A catch-all label for sites that offer a high degree of interactivity without requiring a whole new page to be loaded every time the user clicks somewhere. Gmail and Facebook are popular examples. It's not essential on most business sites, but potentially useful if you're planning lots of customer interaction features.

ASP (Active Server Pages). Microsoft's main technology for creating database-driven sites. Whether you'll use this depends on the technologies offered by your hosting provider.

CMS (Content Management System). Software designed to easily manage content on a web site. WordPress is the best-known example, but there are hundreds of others. Most make use of a web-based interface for site maintenance, so you don't need to install any specialist software to make changes to your site.

CSS (Cascading Style Sheets). The system used by most modern sites to define the appearance of text and graphical elements, making it easier to alter site design on the fly. You don't need a mastery of CSS, but any developers you use should be able to understand it well.

FTP (File Transfer Protocol). A well-established protocol for transferring data around the internet. You'll likely make use of FTP when setting up your site.

HTML (Hypertext Markup Language). The basic language used to create web pages, though only serious techie types actually write much of it; most people rely on specialised editors to conceal its complexity. HTML works in conjunction with CSS.

PHP. A popular scripting language used in producing database-driven web sites. PHP originally stood for Personal Home Page, but the acronym is now largely ignored.

**SEO (Search Engine Optimisation).** The process of ensuring your site is visible in major search engines. A fairly important consideration for businesses, though its significance is often overstated by SEO practitioners.

SQL (Structured Query Language). The underlying database query technology used by most database-driven sites. You won't need any understanding of how SQL works unless you're customising your site at a very extreme level.

UGC (User-Generated Content). Content created by individuals and shared online, such as YouTube videos or Wikipedia articles.

Web 2.0. A catch-all term for sites that make heavy use of interactive elements.
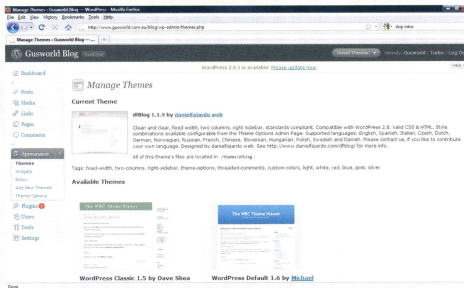
As well as making it easy to add content, CMS-driven sites make it easy to choose between a variety of visual 'themes' for your site without needing programming knowledge.

Hosting options

In theory, you could host your online presence on servers already used for other functions within your business. In practice, this hardly ever makes sense. Using a third-party provider to maintain your presence means they can worry about tedious details such as uptime and installing security patches, leaving you to concentrate on more important issues. This isn't necessarily a function of business size either; companies with huge online audiences like ninemsn rely exclusively on external hosting providers.

When selecting a host, pricing is obviously an important consideration, but also pay attention to what options your provider supports. This can influence your selection of technologies: if your chosen hosting company supports WordPress, for instance, then using that as your basic CMS makes much more sense than paying extra for a different package. Using the same company to host your site and manage business email is generally cheaper, and simplifies the number of suppliers you have to deal with.

The big advantage of a CMS is that it makes updating content on your site much easier without requiring specialist technical knowledge. Many of the most popular CMS packages (WordPress, Drupal and Joomla!) are open source, which means you won't have to pay large licence fees to use them. You shouldn't make the mistake of assuming this means you can build an entire site for free, though: deploying any CMS well requires a degree of customisation and integration, and unless you have a lot of time to invest, it makes sense to pay for someone else to do this (we'll return to this topic more extensively next month when we examine how to write specifications for an online business project).

❋ **Pros.** Major CMS platforms are mature and regularly updated, so keeping your site current and secure shouldn't be a challenge. Adding new content is not difficult and the availability of themes for major platforms like WordPress makes it easy to keep information up to date.
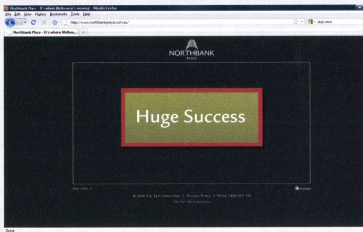
❋ **Cons.** Using a blog-based CMS may not present the image you want for your business, and you should commit to making regular updates and new content, which isn't always easy.

❋ **Key technologies.** As well as the CMS software itself, you'll often need a specific flavour of database software to work with it. This is much simpler as a process if you choose a hosting provider who supports your preferred platform.

Five things not to do

No matter what kind of site you plan, don't make these rookie mistakes:

❶ **Don't have a Flash animated intro video.** These chew bandwidth, turn off users and make your site look dated.

❷ **Don't include reams of affiliate links.** There's an entire industry devoted to self-promotion online, offering 'reciprocal links' to help build your search engine visibility. Don't waste your time on these; concentrate on building a more useful site instead.

❸ **Avoid spelling mistakes.** In the era of word processor spell checks, there's no excuse for this. Just avoid Americanisms, like 'ize' word endings.

❹ **Don't fail to work if the site address doesn't have www at the front.** Time-savvy net surfers often type an address without the www (typing pcuser.com.au rather than www.pcuser.com.au). Make sure your site is configured to work with both options (this will happen automatically with many providers, but check and complain to your host if it doesn't work with your site).

❺ **Don't forget a Contacts link, visible on every page.** Sites can do much more than just offer contact information, but that doesn't mean it should be neglected.

Flash videos to introduce your site are cheesy, not cheerful.

$#!+
I HOPE
OUR BACK-UP TAPES WERE WORKING!

It's too late once your building has been burgled or burnt down. Don't waste money on an expensive in-house system that you'll forget to use. Automate your back-up online to a secure remote site with CRITICALDATA. A low monthly subscription takes the gamble out of it, so you never lose anything ever again.

1300 851 987 · www.critical-data.net.au
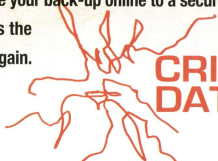
CRITICAL DATA

Do you have the right protection?

Don't get hit by spyware. Protect yourself with Spyware Doctor.™

Experts agree, Spyware Doctor provides the best protection against spyware, malware, identity theft and other online threats. Built-in IntelliGuard™ real-time protection featuring advanced heuristic technology means you will never be caught off guard and will always be protected.

Over 12 million people trust Spyware Doctor to secure their computer against the most notorious, stealthy spyware. Are you one of them?

For your FREE spyware scan visit www.spywaredoctor.com

pc tools™

HELP STATION

▶ SUPPORT

Your technical problems solved

APPLICATIONS

Which OS is fastest?

A few issues ago you provided us readers with 'world first' benchmark software, which enabled one to compare computers and essentially decide which was the quickest. (Has anyone else tried to convince a computer vendor to try it out on the machines in their shop?) However, the magazine article fell short. Where was the test of Windows XP against Vista? We all harbour a suspicion that XP is faster than Vista, so why not set up two identical machines, one with XP and the other with Vista, and sort it out once and for all? For that matter, why not test both machines against a machine running your own *PC User* operating system? I am aware the video guide showed that the UserOS operating system was slower than XP, but that was only when the UserOS was running inside XP, not as a standalone. So which operating system will reign supreme? I'm backing XP, but I'm rooting for the underdog.
— Ian Pegram

Ian, that's a good point. We've run some internal testing on both, but we haven't done a story on it yet. One of the things holding us back has been the imminent arrival of Windows 7. There's not much point in an XP versus Vista test when Windows 7 is just around the corner. So we'll wait until it's finalised and then we'll do a complete test of the lot of them to see if we can find out which is the fastest operating system.
— **Darren Yates**

IMAGE EDITING

Photoshop colour problems

I'm using Adobe Photoshop in conjunction with Dreamweaver. I want to be able to sample a colour from another program into Photoshop and get the RGB values for it so I can use it in a web site design. I took a screen grab of the program in question and pasted it into Photoshop to sample from it, but the colours in the Photoshop image didn't match those on the program screen. What am I doing wrong?
— Amanda Morrison

The problem you're experiencing is that Photoshop is trying to colour manage the document by assigning a colour profile to it. The profile isn't matching the monitor profile you're using so you're seeing different colours in Photoshop. These differences can be subtle while at other times, they can be very obvious. The solution is to stop Photoshop from colour managing the document. For example, if you've pressed the Print Screen key to copy the screen, go to File —> New in Photoshop and click OK to create a new image document the same size as the clipboard contents. Click Edit —> Paste to paste the clipboard image into the document. To remove the colour profile assignment, select Edit —> 'Assign Profile', click OK if a warning dialog appears, select 'Don't colour manage this document' and click OK. You should see the image change back so its colours match those on the screen.
— Helen Bradley
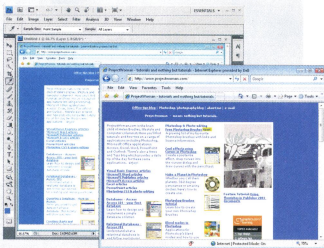
Sometimes what you see on the screen and what you see in Photoshop are two different things.

EMAIL

Missing Outlook passwords

I recently bought a new computer and I want to move my Outlook mail accounts from the old one to the new one. Unfortunately, I have lost some of the password details for these accounts and I can't see them when I look at the account details in Outlook. What can I do?
— Gareth Baker

Microsoft makes it exceptionally difficult to transfer your email accounts to a new computer, as the data is stored in the registry, where it's hard to access. However there's a free utility you can use that makes it as painless as possible. The software is called Mail PassView and it's available from **www.nirsoft.net/utils/mailpv.html**.

When you visit the site, download the Mail PassView program that has Install/Uninstall support and run it. It will load into your Program Files folder and a shortcut will be added to your Program Files collection. You should do this on the old computer, as it has the Outlook data stored on it.

Run the program and it will seek out the password information for all the email accounts you have on your computer. These appear in a dialog on the screen. Select all of them and click File —> Save and save the password entries to a text file. You can then print the text file or copy it to your new computer, open it in Notepad and read all the information you need to set up your email accounts. The file contains the email account name, the name of the application it was assigned to (such as Outlook or Outlook Express), the email address used for that account, your incoming POP3 server, the username for that account and the password. All you might need to do is locate the SMTP server (the outgoing email server name) for those accounts because that information isn't stored; however, your ISP should be able to tell you this.

Once you've got your hands on all the account information from your old computer, uninstall the program so the details aren't accessible to anyone else.
— Helen Bradley

OFFICE APPLICATIONS

Undesirable moving pictures

I'm working on a 50-page document in Microsoft Word 2003. My problem is that every time I add a new picture or graph into the document, everything moves around. I've tried anchoring images and not anchoring them. I've

WINDOWS

Colourful network passwords

My hubby and I disagree on how my office network knew whether network passwords were rude, and I thought Link Harris would be the person to ask. I was employed in a large corporation (as a desk wallah only, not in an IT field) that had the most awesomely anal security system I had ever seen. Building access, telephone calls and our internet access were all tightly controlled. The first network password I had was the one the administrator gave me. When I went to change it — for security reasons — I thought: 'What's the first thing I'll say to myself when I get asked for my password and think I've forgotten it?' At this point I typed in my first four-letter faux pas and was told to create a new password of at least five characters. I did that with several variations on other expletives and got messages along the lines of 'That password uses unacceptable language. Please create a different password (at least five characters)'. The password I had tried to enter was being checked against a list of rude words! Was this a challenge? Well I took it up, and after some concentrated effort, I jumped in my seat as the phone rang. It was an IT fella (who turned out to be a pal from college), who was laughing as he told me to give up — every rude word ever heard in a pub was already in the list and I wouldn't be able to use any unacceptable language for my password!

Here's where my hubby and I disagree. My thoughts are that as Windows Server can remember your last five passwords, it could probably be adapted to check for rude words. He says the password hoovering must be an application

tried wrapping them and unwrapping them, and done everything I thought was possible to get an image to stay where it was put. Is there a way to stop this behaviour?
— Matthew Linney

This is an annoyance and you're not doing anything wrong. I find the best approach is to add all the images to your document

Network administrators have some control over the content of your passwords.

made by someone else. Which is it and how does it work? I can't ask anyone where I worked as I'm not on the payroll anymore and neither is my friend, who's moved on.
— Lynne Street

Unfortunately, I can't give you a definitive answer to your question, except to side with your hubby. Windows Server products don't have any inbuilt way to flag offensive language in passwords. The closest they come to this is the ability for an IT administrator to enforce password complexity requirements. This means a password must contain at least six characters, can't contain more than two consecutive characters of either your full name or your user account name, and must contain characters from three of the following four groups: upper-case, lower-case, digits 0-9 and non-alphabetic characters.

There may well be third-party products that will prohibit colourful passwords, although I personally don't know of any (can a reader help out here?), or it's possible the corporate IT staff developed their own custom application. The general principle of operation would probably be like a spellchecker with a dictionary of words and part-words that someone considers offensive. The MoodWatch feature in email client Eudora (**www.eudora.com**) does this for email, although it only rates a particular email with one to three chilli peppers, depending on the level of offensiveness, and doesn't identify the particular offensive word(s).
— Link Harris

roughly where you think they need to go, but ignoring the fact that they move around for now. Once you have all the images in and sized, although not placed accurately, select each image in turn, right-click it and choose 'Format Picture' —> Layout tab.

In general, you'll probably want to set the wrapping to Square, which wraps the text around the image. The option you won't want to use is 'In line with text', which

Change Password

User name: Link
Log on to: VIRTUALXP
Old Password:
New Password:
Confirm New Password:

OK   Cancel

simply adds the image as if it were another word in the document. Click Advanced and disable the 'Move object with text' checkbox. This means if your text moves, you'll need to move the image yourself.

Then, under the Horizontal and Vertical options, select 'Absolute Position'. From the drop-down list, select Page so the image is fixed in position relative to the page dimensions. Ensure that the values in these boxes are positive numbers less than the physical dimensions of the page — if not, the image will disappear when you click OK. Click OK twice and then, if the image isn't in the exact position you want it, simply drag it into position. Because you've set its positioning to be absolute, the absolute value will change when you move the image around, but none of the other options will.

This should ensure that your images stay in position, regardless of how much text you add to the document and regardless of how many more images you add to it.

— Helen Bradley

This is the code for a small program that illustrates how to read from and write to a file in Visual Basic.

Write data to a file

I have written a Visual Basic program that looks for your computer name and writes it to a label. I need help with writing the label text to a text file stored in the My Documents folder. I need the text file to be called pc_name. Can you help?
— George Packer

This can be done quite easily. Below is a small routine written in Visual Basic 2008 Express Edition that shows the process at work. Start a new project and create a single form with two labels, two text boxes and three buttons. The first button should have its **Text** property set to **Write Text To File**, the second should read **Read Text From File** and the third button should read **Close**.

The two text boxes should be left empty. Make the first label read **Your Text** and the second label read **From File** . Type this code into the form:

```
Public Class Form1

Private Sub Button2_Click(ByVal sender As
System.Object, ByVal e As System.EventArgs)
Handles Button2.Click
    End
End Sub

Private Sub Button1_Click(ByVal sender As
System.Object, ByVal e As System.EventArgs)
Handles Button1.Click
    Dim myfile As String
    myfile = "C:\Users\helen\Documents\pc_
name.txt"
    On Error Resume Next
    My.Computer.FileSystem.
WriteAllText(myfile, TextBox1.Text, False)
    TextBox1.Text = ""
End Sub

Private Sub Button3_Click(ByVal sender As
System.Object, ByVal e As System.EventArgs)
Handles Button3.Click
    Dim myfile As String
    myfile = "C:\Users\helen\Documents\Pc_
name.txt"
    TextBox2.Text = My.Computer.FileSystem.
ReadAllText(myfile)
End Sub
```

If you're familiar with Visual Basic for Applications, you may notice that the process of reading and writing text to and from a file is different in Visual Basic Express. All you need to do to write text to a file is to use the **My.Computer.FileSystem.WriteAllText** command. This command takes the name of the file to write, including its drive and full path name, the text to add to the file and

a Boolean value (**True** or **False**). Use **False** if you want to replace the existing text with the text you're writing to the file and use **True** to append to the file.

To read from a file in Visual Basic, you use the **My.Computer.Filesystem.ReadAllText** command and pass to that function the full drive, path and filename of the file you want to read the text from.

Run this program, type something in the first text box and then click the 'Write Text To File' button. The text will be written to the file and then deleted from the text box. Click the 'Read Text From File' button and the data will be read from the file and passed to the second text box.

It will be easy for you to adapt this program to gather the data from your label and write it to a file of your choice. You'll notice I've used the C:\Users\Helen\ Documents folder because I'm working on a Vista computer. You'll need to replace the path with the correct drive and path to the file you want to write to.

— Helen Bradley

Setting up a media centre

I would love an article on setting up a media centre PC using Windows MCE or Linux, perhaps with a dual HD tuner card. I'm sure lots of others would as well, maybe using an old PC or new, it doesn't matter. Perhaps some tips, ideas, warnings, how to set it up, the best way to connect to TV and audio, and so on. I think it would be a great idea and I'm sure there would be a lot of follow-on interest as well. It might be cheaper than buying a PVR. What do you think?
— Stephen Martin

Stephen, your ears must be burning because we're actually working on

something approaching your request right now. While we don't want to give the game away completely, all will be revealed in the October issue. One thing we can say: it won't be relying on Windows!
— Darren Yates

Operating system security

Like most internet users, I'm always concerned about the security of online banking and credit card purchases. My main operating system is Ubuntu 9.04, which I believe is reasonably safe. What I would like an opinion on is my security method, which entails removing my hard drive (a quick and simple task on my laptop) and booting with a live Ubuntu 9.05 CD. Being a read-only CD, it is impossible for any virus or Trojan horse to become embedded in the operating code. Can you see any drawbacks in doing this?
— Stuart Hall

A virus in the actual operating system code on the read-only CD? Not a chance. But in the system memory? Absolutely. Viruses can attach themselves to code residing in the system memory, which is why the system memory is one of the first things any decent antivirus software will scan first. Viruses don't have to attach themselves to specific files in your hard drive or operating system — they can exist as files in your PC's system memory.

Removing the hard drive and booting up off a live CD doesn't fix this. It's probably not a great thing for the hard drive connectors either if you're continually plugging and unplugging them. The simplest solution would be to simply run a firewall and install an antivirus software package.

For the firewall, go into the terminal and type: **Sudo apt-get install gufw** . This will install a firewall interface into your Ubuntu system. You then start gufw from the menu, click on and check the 'Firewall enabled' checkbox, and press the Apply button.

For the antivirus, give AVG's free antivirus package for Linux a go. You can download it at **http://free.avg.com/download?prd=afl** (download the .deb version for your Ubuntu system and double-click on it to install it).

The bottom line is that no-one can guarantee you'll be perfectly safe from viruses and Trojans — it would be foolish to do so. However, provided you choose your web destinations and downloads carefully, and have a good antivirus and firewall in place, the chances of getting done by viruses becomes diminished.
— Darren Yates

Web site software

I'm starting a new business and I want to create a web site for it. I don't want to have to learn HTML, so could you tell

me if Dreamweaver, which is the program you're using for web development in the magazine, is suitable for creating my first site?
— Jillian Collingwood

Dreamweaver is a great program for anyone who wants to develop a sophisticated web site or who is in the business of creating web sites for others, whether as a hobby or a job. However, it's an expensive program if you don't already have a copy of it, and it does have a rather steep learning curve.

Since you say you're trying to get your business started, your time and effort may be better spent on developing the business rather than working on its web site. I suggest you look at a program such as Serif WebPlus, which was on our November 2008 cover disc, and which is a fully-featured free version. This program doesn't require you to learn HTML and can produce a straightforward and neat-looking web site for you very easily. It's much more like using a word processer than other programs such as Dreamweaver.

Another program you may consider is CoffeeCup Visual Site Designer, which is offered as a 28-day free trial at www. coffeecup.com/designer. You can download the program and give it a go; if you like it, it

Photoshop brushes

I'm trying to make small pictures that are 2.54cm^2 to print and place behind small glass tiles. As I've been collecting Photoshop brushes for some time, I wanted to use those to make the images. The problem is that once the images are reduced to such a small size, everything becomes extremely pixelated. Even when I resize the brush, the images are quite blurry. Can you help?
— Seth Marigold

There are a couple of options you can try. One is to choose Photoshop brushes that are approximately the same size as the image you want to create. If you're printing at 300dpi, then the 2.54 x 2.54cm pieces are 1 x 1in in size, which means your document needs to be around 300 x 300 pixels in size. If your brushes are around that size then you shouldn't suffer a lot of pixelation when you print the documents because you're printing them at exactly the same size you're creating them.
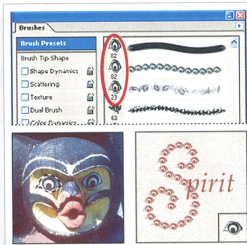
The other option is to use shapes created using Illustrator or which you

To avoid pixelation, choose brushes that are approximately the same size as the image you want to create.

download from the internet. Shapes are vector objects and not bitmap images like brushes. They should scale very large and very small without losing definition. You'll find there are plenty of good sources on the internet for free downloadable shapes that you can use, many of which are royalty-free.
— Helen Bradley
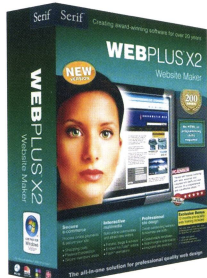
will cost you US$49.

It's important to understand that when you're starting out in business, all you require is a good, clean web site that provides all the information that someone interested in using your services will need. Add the bells and whistles later on when there are funds and the time available to do so.
— Helen Bradley

WINDOWS
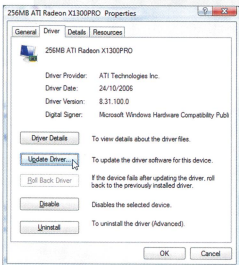
Can't install Vista SP2

I'm having trouble installing Service Pack 2 (SP2) in Vista Ultimate. After SP2 setup set a restore point, I got the message "Installation was not successful". When I clicked the Details link, it displayed: "Error: ERROR_ INVALID_DATA[0X8007000d]". Then I clicked the link to download the System Update Readiness Tool (http://tinyurl.com/SUR-Tool) and ran it. All this did was confirm the error, but with slightly different wording, so it wasn't really any help. I haven't changed any hardware since installing SP1 and I didn't have any problems with that one. Also, the only software changes I've made since then are periodic upgrading of AVG Anti-Virus Free 8.5 and Ad-Aware Free Anniversary Edition 8.0. What should I do next to install SP2?
— Ben Abbott

From what you tell me, you've made all the right moves so far. However, you don't say whether you did a search on **Vista SP2 0X8007000d**, which would be the next logical step after running the System Update Readiness Tool. Unfortunately, although lots of users seem to be getting the same error, there aren't many useful solutions out there. I suggest you try the following, in the order given.
❶ Disable AVG, Ad-Aware and any other security software you have installed (including a third-party firewall) and try installing SP2.
❷ Update drivers. Vista's SP2 is fussier about hardware drivers than SP1, so check the web site of your PC manufacturer for updated drivers. If that isn't helpful, check your motherboard manufacturer's site, as

256MB ATI Radeon X1300PRO Properties — General | Driver | Details | Resources

256MB ATI Radeon X1300PRO
Driver Provider: ATI Technologies Inc.
Driver Date: 24/10/2006
Driver Version: 8.31.100.0
Digital Signer: Microsoft Windows Hardware Compatibility Publi

Device Manager provides a good way to search the net for driver updates.

well as those of the video card and other major components. An orderly way to do the latter is to click Start, type **device manager** in the 'Start Search' box and launch 'Device Manager' to see a list of the devices on your PC. Double-click each device, click —> Driver tab —> 'Update Driver' button and let Vista search the internet. After all the drivers have been updated, reboot, disable your security software again and try to install SP2.
❸ If you've been trying to install SP2 from Windows Update, download the full version instead from http://tinyurl.com/VisSP2. Try installing that and continue using it, if necessary, for the remaining steps. Note that the 350MB file you get is Windows6.0-KB948465-X86.exe.
❹ Uninstall all your security software and try installing SP2.
❺ Restart, press F8 and select 'Safe Mode', and then try installing SP2 from there.
❻ Phone Microsoft on 13 20 58 (Monday-Friday, 8am-8pm AEST), where you can get free support for installing SP2 in Vista until November 26, 2009. Make notes on what you've tried so you can tell them about it, and be sure to have your Vista DVD handy.
❼ Don't forget to reinstall your security software after you finally get SP2 installed.
— Link Harris

OFFICE APPLICATIONS

Excel worksheet rotation

I am the coordinator of the Sunshine Coast Computer Club's Buderim venue, which meets Wednesday mornings. We're avid fans of your articles in PC

User, to which the club subscribes. One of our members has a problem. He uses Microsoft Excel 2003 to keep the handicaps and results for his local golf group. He has a workbook with six worksheets, which he updates from time to time during the golfing day, according to the results of the game. He wants to project these results onto a screen, but he wants the worksheets to automatically rotate, say, every two minutes like a slideshow. Can Excel do this?
— Heather Atkinson

Yes, Excel can do this and the process can be managed using a macro. This should be attached to the workbook that contains the sheets to be rotated. I've assumed the sheets are numbered sheet1 to sheet6 inclusive. To create the macro, go to Tools —> Macro —> 'Visual Basic Editor' and then Insert —> Module. Type the following macro text in the module and then click File —> 'Close and return to Microsoft Excel'.

```
Dim alarmMessage As String

Sub timerSetUP()
   Application.OnTime Now + 2 / 60 / 24, _
   "switchSheets"
End Sub

Sub switchSheets()
   Static sheetNo As Integer
   sheetNo = (sheetNo Mod 6) + 1
   Sheets("Sheet" & sheetNo).Select
   Beep
   timerSetUP
End Sub
```
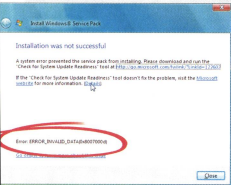
To run the macro, click Tools —> Macro —> Macros and run the timerSetUP macro. The macro includes a beep that sounds when the worksheet changes, which you can use as an indicator that the macro works. In use, you can disable the line that reads **Beep** by prefixing it with a single apostrophe — that will stop it from executing.

The macro uses a timer configured using the **Application.OnTime** statement, which is set to go off two minutes from the current time. When the two minutes have elapsed, the code runs the switchSheets macro, which displays the next worksheet in the sequence. The sheet number is stored in a static integer variable between calls to the switchSheets procedure, so the program tracks the last selected sheet. It rotates around the numbers 1, 2, 3, 4, 5 and 6 (for each of the six sheets) using the Modulus (MOD) function, which returns the numbers 0-5. By adding 1 to these values, the numbers 1-6 are returned.
— Helen Bradley

If installing SP2 in Vista falls over, click the Details link for more information.

Install Windows Service Pack

Installation was not successful

A system error prevented the service pack from installing. Please download and run the 'Check for System Update Readiness' tool [http://go.microsoft.com/fwlink/?LinkID=72963]

If the 'Check for System Update Readiness' tool doesn't fix the problem, visit the Microsoft website to troubleshoot your problem.

Error: ERROR_INVALID_DATA[0X8007000d]

[Close]

Get Windows 7 for less

Windows 7 makes its official appearance on October 22. If you're already a Windows user, can you score an upgrade without spending a fortune? **Angus Kidman** explores your options.

Free and open-source software might be all the rage, but if you want a fully-functioning, official and legal version of Windows 7, you'll have to lay down some serious cash. When Windows 7 gets released on October 22, it will be hard to escape in PC retailers across the nation, but so will the sense of shock at how much Microsoft wants for a release that's widely perceived as largely fixing the huge problems encountered with Windows Vista.

The table below shows the official upgrade and new copy prices for Windows 7, ranging from $199 for a Home Premium upgrade to $469 for Ultimate. (There are a handful of other versions being offered, but not for general retail sale.) Upgrade prices are available to both Windows XP and Vista users.

If those prices seem a little steep, that's because they are. Microsoft has been keen to emphasise that the price for a full copy of Home Premium is 14.3% lower than Vista, but it hasn't made quite as much fuss over the fact that in every other category, prices are either identical or have risen by up to 9.7%.

In the US, some retailers have offered much cheaper upgrades, but those options aren't available in Australia. Most users are expected to upgrade to Home Premium; many consumers are wary of Ultimate, given the minor price difference between upgrade and new versions and the lack of Ultimate Extras for Vista (exclusive post-launch add-ons for Ultimate) that were actually released.

An important note for Windows XP users: while you may be able to purchase an upgrade copy of Windows 7, you won't be able to do an in-place upgrade that maintains your existing settings and documents. Your only option is to do a clean install, which will wipe all your applications and personal data, so make sure you've done a full backup first.

If you purchase a boxed copy of Vista after June 26, you can get the corresponding Windows 7 version for the 'cost of shipping and handling', although Microsoft hasn't yet specified what those costs will be. Microsoft has previously charged $14.95 to ship a CD with Service Pack 3 for Windows XP to users, so it's hard to imagine the Windows 7 offer will be any cheaper.

_HARDWARE DISCOUNTS

Given those prices — and the fact that many users have skipped Vista altogether because of its performance and driver issues — it might seem tempting to purchase Windows 7 as part of a new PC, rather than as a separate option. That could prove a good option, but it largely depends on your chosen vendor.

If you buy a new PC running Vista between now and the end of January 2010, you'll be entitled to an upgrade to Windows 7, but it may not be free. Some manufacturers are offering entirely free upgrades, but the majority are imposing a postage or handling charge, and few are willing to specify the price ahead of the October release.

It's important to double-check conditions. For instance, HP is offering free upgrades on most machines, but not its 2144 netbook. Many other vendors promote 'free' options, but conceal postage details in the fine print. Microsoft maintains a list of participating vendors at **http://tinyurl.com/m63zy4**.

Another option to explore is purchasing an OEM copy of Windows 7. In theory, OEM copies are only supposed to be shipped with a new machine, but in practice, many smaller hardware retailers will sell it to you outright (sometimes with a purchase of additional

System requirements

Microsoft's official hardware requirements for Windows 7 are as follows.

* Processor — 1GHz or faster for both 32-bit or 64-bit versions.
* Memory — 1GB (32-bit version), 2GB (64-bit version).
* Hard disk space — 16GB (32-bit version), 20GB (64-bit version).
* Graphics — the device must support DirectX 9 graphics with a WDDM 1.0 or higher driver.

As always, these are minimum specifications. While many users have reported getting Windows 7 to work on lower-spec machines, such as basic netbooks, performance degrades rapidly when running multiple applications, and the more complicated Aero graphics elements need to be switched off. Vista only just ran acceptably on machines with 1GB of memory, so despite the streamlined performance, it's a risky prospect to have Windows 7 running on such a machine.

Microsoft has reflected those changes with the Windows Experience Index feature, which rates hardware performance. While the same five areas are ranked (processor, memory, graphics, gaming graphics and hard drive), the maximum possible score has risen from 5.9 to 7.9. While Microsoft maintains that this reflects increasing capabilities of modern hardware, it also conveniently means there's no sensible way of comparing the index for Vista and Windows 7 on the same hardware.

hardware, such as hard drives or memory upgrades). This isn't officially supported, so you'll have little grounds for complaint if Microsoft's notoriously aggressive activation process deems your copy to be illegal.

What if I have Windows 7 RC?

Microsoft actively encourages users to try out the Release Candidate version of Windows 7 (effectively, the last major beta version) prior to its commercial debut. However, just because you've scored a free test copy of Windows 7 and offered Microsoft your feedback, don't expect to get any special treatment when it comes to purchasing the final product. Although there was widespread online speculation that testers might get a discount, no such scheme had emerged when this issue went to press (and it seems unlikely, given the scale and nature of the testing).

Windows 7 RC installations will also need to be upgraded to a commercial (paid-for) release come March 1, 2010, or they'll begin demonstrating reduced functionality. From that date, Windows 7 RC installations will start automatically shutting themselves down every two hours, with no way of interrupting the process. From June 1, 2010, the software will refuse to boot at all. While there may be unofficial hacks to try to keep the Release Candidate working, the bottom line is that only commercial versions of Windows 7 will run correctly from mid-2010.

WINDOWS 7 RECOMMENDED RETAIL PRICING

Version	Upgrade	New
Home Premium	$199	$299
Professional	$399	$449
Ultimate	$429	$469

SUPPORT

Souped-up search

Windows Search 4.0 leaves XP's Search Companion for dead, as **Link Harris** explains.

The wimpy Search Companion is one of XP's most pathetic features, and all the more so for having survived untouched through three Service Packs. Freeware third-party search utilities, such as Copernic Desktop Search Home (**http://tinyurl.com/4tgeax**) were quick to pick up the slack and have been around for yonks.

However, Microsoft has finally entered the fray with the freeware Windows Search 4.0 (WS4), available from **http://tinyurl.com/6camyy**. This allows you to quickly locate a wide range of files on your PC (which WS4 calls Desktop), including documents, photos, videos, music and emails (the latter for Outlook or Outlook Express only), based on text matches with the filename, Properties sheet, metadata and content. Alternatively, you can do a Bing search on the web via **www.bing.com**, Microsoft's latest hopeful in the internet search competition, which has elbowed Live Search aside.

Installing WS4 adds a search field, called the Deskbar search box, to the right end of the taskbar. Selecting the Deskbar box brings up a 'Windows Search Results' window, where hits appear as you type. That window also has Desktop and Web buttons for toggling the search target. To the left of the 'Search Desktop' button, a Windows logo button displays a menu with Help and 'Deskbar Options'. In classic Microsoft style, the ultimate Deskbar option, 'Hide Windows Search Deskbar' is not on the 'Deskbar Options' menu, but on the Help menu.

Although the default Deskbar option, 'Enable Search As I Type', is an appealing feature, many users will prefer to disable it to get the turbocharged 'Windows Search Results' screen that displays the file contents or Properties sheet when you select a hit. To display results for this configuration, first type the search string into the Deskbar

box and either press Enter or click the Go button (the magnifying glass) at the end of the search box.

Installing WS4 also replaces Search Companion as the target for Start —> Search or Windows key-F. Accessing WS4 either way gives a more comprehensive 'Search Results' window than does the Deskbar search box, even with 'Enable Search As I Type' disabled. You can specify particular locations to search, narrow the search to just documents, or choose from a swag of search filters including size and filename. And if you relapse into a retro moment, scrolling to the bottom of the 'Search filters' list displays a link for Search Companion.

step by step GET STARTED WITH WS4
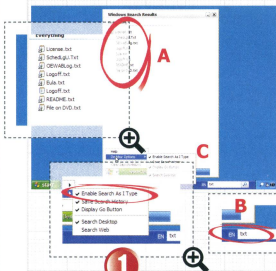
Type a search string in the Deskbar search box and press Enter. The search string will be automatically transferred to the search bar in the Results window. Note that you can use Boolean operators to refine your search. For more details, see 'Rules for advanced searches' in the Reference section of the Help file. Then select a hit to preview its contents. **2**

With the default settings, hits appear (see A) as you type into the Deskbar box (see B). Click the Windows logo icon then 'Deskbar Options' and untick 'Enable Search As I Type' (see C). This gives a display with a preview window, as shown in step 2. **1**

For a more powerful results display, click Start —> Search, select the filter(s) (see A), type the string into the 'Windows Search' field (see B) and press Enter. **3**
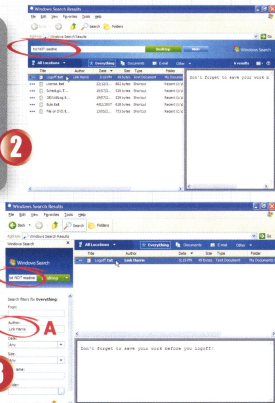
No place like home

Linux has many advantages and one of the best is being able to upgrade while keeping your desktop and documents intact, as **Ashton Mills** explains.

One of the beautiful features of Linux is that it's so easy to install and upgrade. With Ubuntu you can even update between milestone releases on the spot, without ever having to perform a clean install like you would with Windows.
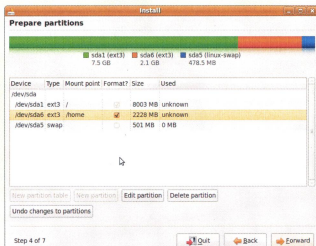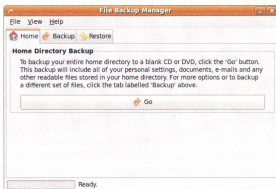
Even if you do need a clean install — if you're switching Linux distributions or trying a new one — you can make the update painless and keep your desktop layout, and everything you use on it, by simply taking advantage of the Linux file system. With Windows, doing a clean install to replace one version with another requires you to back up or lose your desktop and its settings, but with Linux you can install a whole new operating system while keeping your documents, desktop settings, browser bookmarks and everything just where you left them.

File Backup Manager makes it easy to back up your home directory.

Setting up a root and home partition for Ubuntu.

_WELCOME HOME

Traditionally, all user accounts are stored under the /home directory. Everything about your desktop, from the files you store there to the settings for every application you use, can all be found under your username in the /home directory. If you always save all your working data here (usually you have no choice due to permissions) it makes it very easy to back up your documents and desktop settings. However, because everything is separated this way, you can install Linux without having to touch the /home directory.

While some distributions try to make it easy for a new user by not confusing them with lots of partitions, traditionally the /home directory was one of many directories often given its own partition. One advantage to this, from a system administration point of view, is being able to easily manage disk space and backups for user data. It's also handy in the home environment — if during installation you create a dedicated partition for /home and a partition for root (/), you

can install as many versions of Linux as you want in the root partition, including formatting between each one, and always leave /home — and all your documents and settings — intact.

_SETTING UP HOME IN UBUNTU

Doing this with Ubuntu is easy, with a little practise. During installation, when you're presented with the partitioner, instead of using the whole disk or allowing Ubuntu to manage partitioning, choose to set up the partitioning manually.

From the partition setup screen, create two partitions by right-clicking on free space and selecting New. Depending on your setup, you may need to delete the root partition from your old install (make sure you've backed up important files first!) to replace it with two partitions.

You'll need to think about how much space you want to allocate to your /home partition. For example, if you have 20GB set aside for Linux, you might use 15GB for the root (/) partition and 5GB for /home. It depends on how much space you usually use for storing your documents, how much space is available on the disk and how much overall space you're giving to this install.

In the 'New partition' dialog, the defaults

will usually be fine — you just need to set the size of the partition and, most importantly, the mount point. Make sure you assign a root (/) partition and a /home partition before you proceed.

_BACKING UP

If you've already got an Ubuntu system, but plan to do the above in future and want to back up your current settings, there are a few ways you can do this. If you're a command line junkie, a simple `tar -czf /media/[device]/HomeBackup.tgz /home` command would do it after you've mounted another drive or network, to the /media directory. Decompressing an archive can easily be accomplished with `tar -zxvf [filename].tgz`.

Or even more easily, you can use a tool like File Backup Manager. Click Applications —> 'Add/Remove', make sure the Show drop-down menu is set to 'All available applications' and search for 'File Backup Manager'. Once installed, click System —> Administration —> 'File Backup Manager' to launch it. While you can define your own backup profiles, by default it includes one to back up your user home directory to a CD or DVD. If you wish to change the destination to a directory, external hard drive or network, click the Backup tab and then edit the home backup set before proceeding.

CULV: revolution or hype?

According to **Darren Yates**, the numbers for CULV notebooks don't come close to matching the hype.

I understood the initial attraction to netbooks — cheap, ultraportable, low-power devices that delivered a budget way to compute on the go. But unfortunately, as time has gone on, vendors have been cranking up the prices on netbooks by offering luxury models featuring fancier keyboards and designs, though most still only offer the same basic Intel Atom performance.

Along those same lines, we're now seeing the rise of Consumer Ultra-Low Voltage (CULV) notebooks, which offer a bit of bling with slim and lightweight designs, but without the excessive cost of previous executive toy models. CULV is the market name for new supposedly low-power processors being developed by Intel and AMD, which sadly offer only moderate improvements over the Atom.

In a conference call about Intel's first-quarter 2009 earnings, Intel boss Paul Otellini was recently reported as saying that "the big trend in notebooks this year, starting mid-year, is likely to be very well designed thin and light notebooks using the CULV or ultra-low-voltage products".

What you're not being told is that compared with similarly sized Core 2 Duo notebooks, CULV notebooks kiss about half of the performance goodbye as well. The table below gives a bit of a bird's-eye view of the notebook market in the sub-$2,000 price range. You've got netbooks at the bottom end, ranging in price from $600 for MSI's Wind U100 PLUS to $1,400 for the ASUS Eee PC 1004DN; so far, you've got

CULV coming in between $1,600 and $2,000; and in and around that same space, you've got traditional budget dual-core notebooks.

Based on our testing, the best we think CULV notebooks can hope for is to lower the weight of 13.3in and 14.1in models to 12.1in levels. To do that, though, you have to take a considerable hit in application performance; in some cases, as much as 60%.

So far, we've seen the MSI X-Slim X340, Acer Aspire Timeline 4810T and Pioneer DreamBook Light 9223 CULV, and they demonstrate this. Of those three CULV notebooks, only the Acer managed a battery life greater than 3 hours. However, it weighs in at just over 2kg — while that's not bad for a 14.1in notebook, it's hardly what you'd call groundbreaking.

Compare these CULV models with the Dell Vostro 1220 or HP Compaq 2230s and you're looking at reasonably comparable battery life and weight, but completely different performance levels.

Intel's Otellini also said about CULV notebooks: "I think you'll see those at very attractive price points. Up to this point in time, those machines have been sort of executive jewellery."

Indeed, previous ULV notebooks that we've tested sold for around $3,000 and beyond. We've never described them as great value, although most at least offered
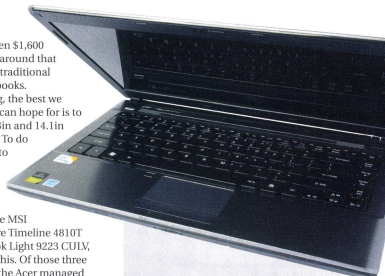
CULV notebooks typically offer around half the performance of equivalently priced Core 2 Duo notebooks.

very considerable weight and battery life benefits as part of the package. While CULV is seeing these latest models drop to typical consumer notebook price levels, that's still a long way from them being good value-for-money propositions.

There are three basic features you need to look for in any notebook: battery life, weight and performance. Balancing all three is the key to getting the best result and as far as we can see, CULV notebooks try to favour the first two at great expense to the third. That's hardly a recipe for creating great-value notebooks.

CULV NOTEBOOKS: HOW THEY COMPARE

Model	CULV			Budget Core 2 Duo		Netbook	
	Acer Aspire Timeline 4810T	MSI X-Slim X340	Pioneer DreamBook Light 9223 CULV	Dell Vostro 1220	HP Compaq 2230s	BenQ Joybook Lite U101B	Dell Latitude 2100
Price	$1,699	$1,699	$1,999	$1,347	$1,479	$699	$773
SPECIFICATIONS							
Processor	1.4GHz Core 2 Solo U3500	1.4GHz Core 2 Solo U3500	1.3GHz Intel Core 2 Solo U2700	2.1GHz Intel Core 2 Duo T6570	2.1GHz Intel Core 2 Duo T6570	1.66GHz Intel Atom N280	1.6GHz Intel Atom N270
Memory	4GB DDR3	2GB DDR2	4GB DDR2	2GB DDR2	2GB DDR2	1GB DDR2 (32MB shared)	2GB DDR2 (tested)
Screen size	14in	13.3in	13.3in	12.1in	12.1in	10.1in	10.1in
Weight (kg)	2.005	1.4	1.71	1.975	1.8	1.294	1.472
PERFORMANCE							
UserBench Encode 2009	15.83	15.72	13.81	29.78	30.5	8.54	8.09
UserBench Battery 2008	4:48	2:19	2:44	3:55	2:36	4:14	4:59

Anonymous torrents

Nathan Taylor investigates the new web services that offer anonymous P2P.

There's no getting around it: peer-to-peer (P2P) networks are used extensively for piracy and recently, copyright agencies around the world have been stepping up efforts to stop this — even in Australia, where a major ISP is currently being sued for failing to prevent copyright infringement on its network (see 'iiNet on trial' below).

Copyright agencies can and do monitor P2P traffic for instances of copyright infringement. From this they harvest the IP addresses of users who trade in illegal files. While those IP addresses don't identify the individual, they do identify the ISP

> The I2P Network Plugin is a Vuze plug-in that routes BitTorrent traffic through the anonymous I2P network.

the person uses. The ISP can then be compelled to identify the owner of the account in question.

This usually requires a court order to accomplish, but numerous copyright agencies around the world are lobbying to have this burden removed. Instead, many would like to see some variant of the 'three strikes' rule implemented, where a copyright agency sends infringement notices to ISPs who are then required to pass on warnings to users, and eventually cut off repeat offenders from internet access. For the copyright agencies, this spares them the messy and expensive business of dealing with the courts.

Given the constant monitoring of the networks, a number of P2P users are finding that they're more comfortable with the privacy afforded by anonymising systems. Anonymisers use a proxy to hide the user's IP address from the network. Instead of their own IP address, the user appears to be using the IP address of the proxy, which can't be easily traced back to the user.

Several anonymising networks are already in wide use. Torrent Reactor runs a service called TorrentPrivacy, a US$10 per month subscription that uses a modified version of μTorrent to access BitTorrent through a proxy. The Pirate Bay was trialling a similar service called IPREDator, which it planned to release at a cost of €5, but with The Pirate Bay's recent sale (see 'iiNet on trial'), that service is now in question. Relakks, on which IPREDator was based, is still in operation, however, and that anonymising service is available for €5 per month.

While those are paid services, several free systems are in use as well. BitBlinder, for example, provides a client based on BitTornado that routes P2P connections through several other users on the network, obscuring the source and making it very difficult for copyright agencies to determine who's doing what. The Tor and I2P networks work in a similar fashion, but these networks are not often used for P2P, since they're horribly inefficient and quickly get choked

> This is the control panel for the anonymous Tor network.

by the massive bandwidth requirements. In fact, BitTorrent is officially banned on the Tor network.

The problem for these free services is bandwidth. A connection that's routed through several other users is only going to be as fast as the slowest connection in that chain, and even web browsing on the Tor network can be painfully slow. In Australia, there's also the problem of volume monitoring — having other users' bandwidth routed through your computer can really gut your monthly quota.

Paid VPN services such as Relakks have a slightly different problem. P2P uses massive amounts of bandwidth (more than 50% of all internet bandwidth by some accounts) and those VPN services have to provide all of that. So far they've been up to the task, but as more users seek anonymous internet access, the burden may prove too much.

iiNet on trial

Late last year, the Australian Federation Against Copyright Theft (AFACT) filed a lawsuit against iiNet, accusing the ISP of contributing to copyright infringement because it failed to take steps to stop its users from downloading pirated movies and television shows over P2P networks. AFACT hopes to turn this into a test case, with significant ramifications for Australian ISPs should it win.

AFACT said that iiNet was failing to act on notices it sent to the ISP regarding alleged copyright infringement. AFACT wanted iiNet to pass on these warnings to its customers and eventually cut off repeat infringers from the internet. iiNet in return made a statement that it turned over all such accusations to legal authorities and that it had no right to cut off customers on the say-so of a private organisation like AFACT.

At the time of writing, the case was still going, and the court recently compelled iiNet to hand over the download histories of 20 of its users, stripped of identifying information.

iiNet's case is not the only high-profile copyright infringement case underway. Popular Swedish BitTorrent tracker The Pirate Bay was recently hit with a 30 million Kronor (a little less than $5 million) fine for assisting copyright infringement. It first called for a mistrial, noting that the judge involved in the decision had links to copyright agencies. That attempt failed, and now it intends to appeal the decision. However, at the end of June it was announced that The Pirate Bay would be purchased by a company called Global Gaming Factory X AB for 60 million Kronor (about $9.7 million). The new owner says it wants to close down the Pirate Bay's trackers and move the company in a more legal direction.

Search your shares

Link Harris explains how to quickly search PCs on your LAN, from either XP or Vista.

If you're running Windows XP SP2 or better, you can set up rapid network searches with freeware Microsoft Windows Search 4.0 (WS4). The speed secret is that WS4 can index the text contents as well as filenames for PCs on your network, in addition to your local PC. WS4 is introduced on page 77 and you can download it from **http://tinyurl.com/6camyy**.

If you want to search PCs on your network with earlier versions of Windows Search, you have to download and install the free 'Add-in for Files on Microsoft Networks' from **http://tinyurl.com/m2yk4y**. WS4 already has those features, but the way they're incorporated makes them appear based on.

There's a second magnifying glass icon in the notification area, in addition to the one at the right of the Deskbar search box. Either left- or right-clicking the second magnifying glass gives you a menu with several indexing options and 'Windows Search Options'. Selecting the latter displays the 'Indexing Options' window. Clicking the Modify button lets you change index locations on your local

PC. The Advanced button has three tabs. The 'Index Settings' tab lets you manage all indexing and the 'File Types' tab gives you some control over which file types are indexed. The third tab is explained in step 3 of the step-by-step guide below.

Vista comes with its own version of Windows Search. To include network shares in searches:
❶ Click Start and type the search string into the 'Start Search' box.
❷ Click the 'Search Everywhere' link.
❸ If the 'Search Pane' isn't visible, click Tools —> 'Search Pane'.
❹ Click 'Advanced Search' at the right end of the 'Search Pane'.
❺ Drop down the Location list and click 'Choose search locations'.
❻ Double-click Network in the 'Change selected locations' box. (Ignore the tip that says 'Network may not be added to this search'.)
❼ Click one or more computers on the network to search shared folders.

❽ To search only some of a computer's shared folders, double-click the computer and then untick it. Then tick the folders you want to search.
❾ Check the 'Summary of selected locations' box, modify if necessary and click OK.
❿ Click the Search button.

This procedure permanently indexes both names of files and their contents, and this information is saved for future searches from the 'Start Search' field. You can also enhance the search features of Vista SP1 by updating to WS4 from **http://tinyurl.com/nbz4ag**. Before you do this, you should check whether WS4 is already installed:
❶ Click Start —> 'Control Panel' —> Programs.
❷ Click 'View installed updates' under 'Programs and Features'.
❸ If WS4 isn't listed, you should install it. ☺

stepbystep INDEX A NETWORK SHARE IN XP
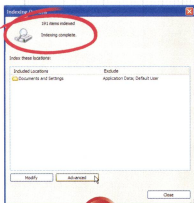
❶ Right-click the magnifying glass in the notification area and select 'Windows Search Options' —> Advanced button.

❷ Click the 'Add UNC Location' tab and type in the name of a network share in the form \\remotecomputername\sharename [\\server\downloads for a shared folder named Downloads on the PC named Select, for example]. Click the Add button and then OK to clear the information box. Then click OK.
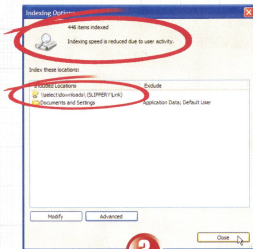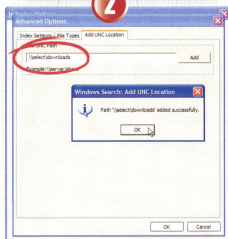
❸ Click Close. Note that WS4 is busily indexing the contents of Downloads (compare to step 1). Any search you do for something in that folder may fail until the indexing is complete. To find out how it's going, right-click the magnifying glass in the notification area and select 'Indexing Status'.

Fix digital TV recordings

Darren Yates shows you how to fix errors in PVR/digital TV tuner recordings so you can back them up to DVD.

Personal video recorders (PVR) and digital TV tuner cards are great devices for recording television shows, but problems can arise if you want to back up those recordings to DVD. One significant issue recorded digital TV can suffer from is breaks in the recordings. This happens because it's not always possible to get a perfect signal when you're recording using a PVR or digital TV tuner card. You can sometimes get small breaks or errors, which appear as either block errors, dropped frames or gaps in the sound.

The technology behind digital TV was designed to be able to cope with this, so instead of using the standard MPEG-2 Program Stream (PS) encoding DVDs and Blu-ray discs use, free-to-air digital TV broadcasts use MPEG-2 Transport Stream (TS) encoding. This format breaks the audio/video data into small chunks or 'packets', so if your TV, PVR or digital TV tuner card loses the signal, it can synchronise back up again. Digital video recordings from these devices still use basic MPEG-2 video encoding, but they'll typically come in a file container called .ts or .m2ts, signifying the transport stream protocol used. In fact, Blu-ray movie discs already use transport stream encoding for similar reasons, and it's one of the more subtle technical differences between DVD and Blu-ray.

_CONVERTING TO DVD

The problem with TS recordings comes when you want to back up shows to DVD and attempt to convert them to standard DVD-Video-compatible PS format. It's not so much the conversion that's the issue, but more how to fix those small gaps in the digital signal that appear as dropouts.

Most conversion tools will see those errors and continue to barrel on through, converting whatever they see. The problem with this approach is that those errors can cause synchronisation errors where the sound and video get out of sync, either with the sound leading or lagging the visuals.

The more errors that turn up, the worse the problem can get. At its worst, the sound can be out of sync with the vision by seconds, making the video completely unwatchable.

_FIXING THE GOPS

All video encoding uses a technique of

linking the sound with images by dividing groups of video frames together to form what's called a Group Of Pictures (GOP), each group having a fixed number of frames and designated start and end points. The sound is synchronised to these points, ensuring the audio and visuals match, but if an error occurs and the GOP is not completed correctly, the correct sync points can be lost. For example, DVD movies use a GOP size of 15; however, if an error occurs when encoding the .ts video file to DVD format and the last three frames of that GOP have gone, you might end up with a GOP of 27, but the

sound linked in at the point where the GOP of 15 should have been, effectively pushing the audio back compared to the video.

There's only really one way to fix this and that's to get rid of any GOP that isn't complete. We know that any correct GOP will have the sound and vision in sync, so all we need to do is ditch any broken GOPs and the sound and vision will thereafter remain in sync. You may see some short gaps in the video and sound, and you'll still see an occasional block error, but that's preferable to watching audio and video that's completely out of sync.

stepbystep FIX, CONVERT & BACK UP .TS
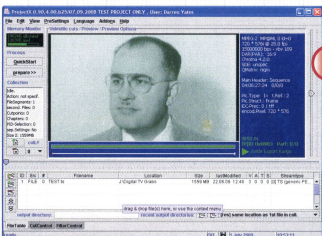
1 Grab the portable ProjectX application from http://tinyurl.com/mzvntj, unzip it and launch projectX.exe to start the app. Press Ctrl-O and load in the .ts file you wish to fix.

2 Click the Prepare button on the left side of the ProjectX screen and click on the 'to TS' checkbox when the ProcessWindow screen appears. After that, press the 'Play/Pause' button to start the file processing. When complete, shut down ProjectX.
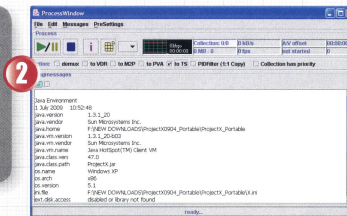
So how do you do it? Thankfully, you only need one tool to fix .ts video files and the process itself doesn't take long, nor is it difficult. Once the .ts files are fixed, you can then encode them using your favourite video encoding tool.

_DO IT TWICE

The tool you need to fix these errors is called ProjectX (download it at **http://tinyurl.com/mzvntj**). It's a free app designed to fix TS video recordings by doing exactly what we said — it cleans up GOPs and ensures that only correctly captured groups are used. However, in order for it to do its job, we have to run the .ts file through twice. We're not quite sure why this is, but it seems integral to fixing all the errors.

The way we use it is to take the original .ts file, run it through ProjectX and have it create another .ts file at the end. Then, run the new .ts file through ProjectX to get another .ts file. It's this last .ts file that we

can then use to convert into DVD format.

Thankfully, because we're not actually encoding anything — we're simply looking for and removing broken or incomplete GOPs — a 45-minute .ts file can be processed in around two minutes on a 3GHz Core 2 Duo E8400-based computer, so it's a pretty quick process.

_TS TO DVD

You can use any DVD creation software that supports .ts files to turn your TV recordings into DVDs, even our exclusive Ripping & Burning Toolbox 2009 (RBT2009) software from the May cover disc. While this software wasn't originally designed to handle .ts files, there's an easy workaround. After sending your .ts file through ProjectX twice, fire up RBT2009, click on the 'DVD Movie Encoder' section and click the Browse button to load in the file to convert. Initially, you won't find

your .ts file listed because the 'File of type' entry in the 'Open File' dialog box doesn't include .ts files. Simply type ***.ts** in the 'File Name' entry box and press Enter. This will bring up all the .ts files in the current folder listing. Then, click on the .ts file that's been through ProjectX twice, click the Open button and you're ready to set the rest of RBT2009's DVD movie encoding parameters. Once the MPG video has been created, you load it into the 'DVD Movie Authoring' section of RBT2009, make your DVD movie and you're done.

This process will work with both standard-definition and high-definition .ts files, although RBT2009 can only create standard-definition DVD movie discs, so you'll lose a big chunk of the resolution with HD files. But that's always the price you pay if you want to turn your high-def .ts files into DVD movie discs.

FILES
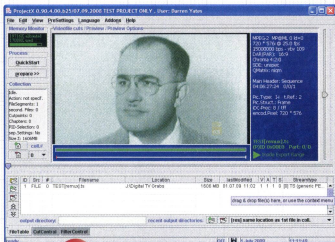
③ Start up ProjectX again, load in the .ts file created in step 2 (it will have the same name as before, but with [remux] added) and then repeat step 2.

Fire up the Ripping & Burning Toolbox 2009 from our May cover disc (if you're running Vista, get the RBT2009 SP2 patch from **http://tinyurl.com/rdkbkp**). Click on the 'DVD Movie Encoder' tab, click the Browse button and load in the .ts file created in the previous step (it should have [remux][remux] in the filename). Enter the correct runtime of the file in minutes in the Duration entry box. Make any other required changes, choose a filename and save location for the .mpg file you're about to create, and click the 'Create Video' button.

④
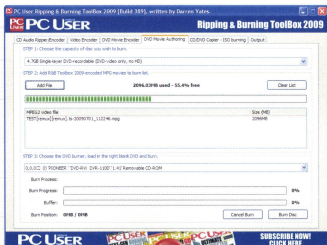
⑤ Once the encoding is complete, click on the 'DVD Movie Authoring' tab in RBT2009. Click the 'Add File' button, select the .mpg you just created and choose to burn to a single- or double-layer disc. Load the media into the optical drive and click 'Burn Disc' to create your DVD. Once the disc is released, load it into your DVD player and it should play.
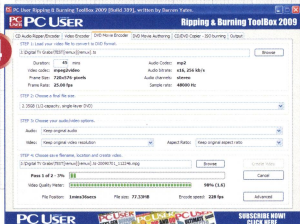
Focus your video editing

Philip Moore explains how to edit your videos for your target audience.

This month, we'll discuss how you use video software. This is because regardless of who you are, video editing these days is less about the ability to do it (nowadays anyone can do it) and more about knowing your audience.

_THREE TYPES OF USERS

We don't mean pro, semi-pro and consumer here; these are marketing distinctions for the people who buy the software. What we're referring to is *your* end user. There are three distinct audiences for video projects. The lines tend to blur, but essentially you have:

❶ **Cinema, iMax and 3D.** This is the high-end cutting-edge stuff. Creating content for this audience requires software that can handle things like workflow integration of different tools from different manufacturers, support for 4K resolution images (4x HD resolution or greater), stereoscopic (3D) cinema, and professional camera and file support.

❷ **D-Cinema, HD, DVD and broadcast TV.** This is most of us who watch TV or go to the cinema. Filmmakers creating content for this audience are interested in HD technologies, integrated tools for editing, sound, video effects and DVD authoring (including Blu-ray). This applies to both professional and amateur filmmakers, because despite having different motives, they really are after the same out-of-the-box solutions — from shooting to DVD.

❸ **Mobile devices and the web.** In a way, this is the other cutting edge of digital content: the convergence of TV and the computer, or whatever new digital media technology emerges over the next 10 years. For now, it means getting your video down to the right size and format for the variety of mobile devices and video web sites out there. Of course, there's no one-size-fits-all solution here.

Put simply, we're dealing with video for very big screens down to very small screens, and they all have their own special requirements and quirks.

Most video editing programs try to cater to options two and three, with solutions for both big and small screens, from HD and Blu-ray to YouTube and iPhones. It doesn't matter if you're a professional filmmaker or just someone doing home movies for the soccer club, you simply want to make your videos available in whatever form best suits your audience.
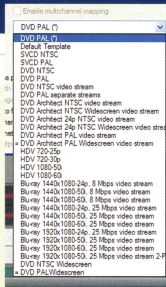
_WHICH SOFTWARE?

With this in mind, how do you choose the right video software? The simple answer is to look at your workflow, and this begins with your camera.

If you have a DV camera, as long as you have a FireWire card in your PC any video software will handle it no worries. DV is wonderfully generic. HDV (capturing with MPEG-2 compression to DV tapes) is also reasonably generic and supported by most programs now. If your camera captures in HD using AVCHD compression, to a hard drive or flash memory, then the video software you choose needs to support this, and maybe even your specific make and model of camera. Most programs are now up to speed with these newer formats. With something more professional like a Panasonic P2 or Sony XDCAM camera, the choice of software becomes more critical. Consumer programs generally won't support these cameras and their compression schemes.

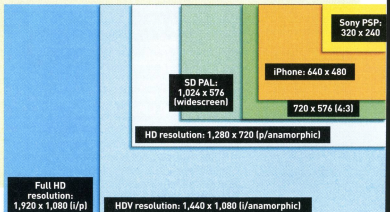Next, look at the scale of the projects you edit and the level of control you want.

On a purely technical level, there's little difference between cutting a home movie or a feature film. It just depends how much footage you have to deal with, and how clever you want to get with it. For greater flexibility with lots of footage (especially if it's at HD resolution), look to the more serious software tools. This extends to how serious you want to get with visual effects or sound design, in which case a suite of tools might be more appropriate.

Then, look at your final output. Consumer software covers all the usual formats from AVI to DVD and now YouTube. However, if you want to have more control over compression, need to support specific mobile devices or want more flexible tools for disc authoring, then look into the higher-end programs. Also make sure it supports NTFS rendering if you need to make DVDs to send to the US.

Finally, if you're likely to work with other people on a project, you need to take this into account. Try to use the same software, or software that at least supports a common file format (like AAF or OMF), so you can move things back and forth.

Don't feel you have to stick with 'industry-standard' tools, though. Go with whatever works best for you and your situation. 🖮

This is the list of options presented by Sony Vegas when rendering a video to MPEG-2.

This is a comparison of different screen resolutions, from full HD down to PSP format.

Sony PSP: 320 x 240

iPhone: 640 x 480

SD PAL: 1,024 x 576 (widescreen)

720 x 576 (4:3)

HD resolution: 1,280 x 720 (p/anamorphic)

Full HD resolution: 1,920 x 1,080 (i/p)

HDV resolution: 1,440 x 1,080 (i/anamorphic)

Use ASP with forms

Helen Bradley explains how to use ASP to submit a form's content via email.

Last month, we showed you how to create a form for your Dreamweaver web site. This month we'll add some ASP code to it, which will provide the form handling routine. For this, you'll need to be using a web server that runs a Windows operating system and that has ASP installed. The code we're using is applicable to any web form created in any software or even hand coded, so Dreamweaver is not technically required for this.

_ WHY DO WE NEED CODE?

Before we start, some background as to why we even need to add code to make sure our form work is in order. The problem with web forms is that the simplest way to make a form email its results to you doesn't work in most modern browsers. When FrontPage was popular for web design, it provided inbuilt form handling and that made a big difference, too.

You have to create the code to manage the form handling routine yourself — Dreamweaver doesn't supply it, even though a form is of little use without it. If you have ASP installed you can write the code yourself. If you don't, you can use PHP to handle the form if it's installed. These sites provide some useful information for PHP form handling: **http://tinyurl.com/m3mmdo** and **http://tinyurl.com/csvd6t**. If you're on a Unix server and you have access to CGI scripts, you can use FormMail from Matt's Script Archive at **www.scriptarchive.com/formmail.html**, or anyone can access the hosted version for a fee at **www.formmail.com**.

You should also check with your hosting service, as it may provide form handling routines as part of its service package. In any case, the support desk will be able to tell you what operating system the server uses and whether you can use ASP, PHP or CGI.

_ ASP CODE

Below is the ASP code that handles the form we created last month. In Dreamweaver, type this into the form page by first clicking the 'Show Code View' button and locating the opening HTML tag — the code goes just above this.

```
<%
if request.form("sendbutton").Count > 0 then
```

The resulting email sent from the form looks like this.

```
returnmessage = "full name: " & request.
form("fullname") & VbCrLf & "comments: " &
request.form("comments")
Set returnemail = CreateObject("CDO.Message")
returnemail.Subject = "Web site comments"
returnemail.Sender = Request.Form("email")
returnemail.to = helen@helenbradley.com
returnemail.textbody = returnmessage
returnemail.send
response.Redirect("thankyou.html")
end if
%>
```

The code is wrapped inside a set of code block markers `<%` and `%>` . The `if` statement checks to see if the user has clicked the Send button and if so, the code will run. In the second line, the `returnmessage` variable is used to assemble the email message text — it uses a combination of hard-coded text and the contents of the text fields from the form. The `vbcrlf` code creates a new line in the email to separate the person's name from the comment text.

The `Set returnemail =` line calls the Collaboration Data Objects (CDO) component, which handles the email sending. The word `returnemail` is our own name for the variable we're using (it could be anything); all the other code in this line is compulsory.

In the following lines we compile the bits and pieces needed for the email message: the sender, subject and recipient. The subject is hard-coded in the line that begins with `returnemail.subject` and the `returnemail.sender` variable takes the sender's email address from the form text field we named `email`. The `returnemail.to` line is also hard-coded to our email address — you'll need to change this to your own email address.

The `returnemail.send` line simply sends the message using the CDO handler, and then the following line takes the name of the web page to which the visitor will be redirected immediately after the form has been sent. The line `end if` completes the `if` statement.
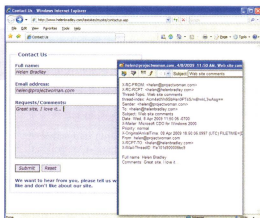
_ OTHER MESSAGE OBJECTS

There are other objects you can use with CDO messages. For example, `returnemail.from` would allow you to specify an email address the message was sent from. Also, `returnemail.HTMLbody` can be used to send an HTML-formatted message. The text in the text area would be interpreted as HTML code, allowing a visitor to format their message with tags like `<b>..</b>` for bold or `<i>..</i>` for italics.

In addition to `returnemail.from` , you can use `returnemail.cc` and `returnemail.bcc` to specify additional email addresses to which a copy of the email will be sent.

_ TEST THE CODE

Before you can test the form, you need to create a page called thankyou.html, which contains a message of thanks to your visitor for filling in the form and confirming that the email has been sent. While you can create a stub page for now, ultimately you'll want a page that contains the navigation system of your web site, so visitors can get back to it.

To test the code, enter your own email address in the ASP code. Save and upload the pages contactus.asp and thankyou.html to your web site and upload the CSS style sheet file you created last month.

Visit your site and load the form page. Type the requested details into the form and click Submit. You should be taken to your thankyou.html page and you can then check your email account to read the email you'll be sent from your server. If the message is successfully received, then the form is working perfectly.

Easier Word 2007

Helen Bradley introduces some program settings and tools to make life easier in Word 2007.

Word 2007 comes with a new interface and new features to supposedly make document production easier. It has also relocated its configuration options to a brand-new dialog. We'll show you where to find some key settings and some handy features for working with the program.

_WORD OPTIONS

The customisation options are located in the 'Word Options' dialog, which you can find by clicking the Office button and then 'Word Options'. In the Popular category, enable 'Show Developer tab in the Ribbon' if you plan to use macros — these are accessible from the Developer tab and it's not enabled by default.

To stop Word automatically converting paragraphs with a number or asterisk to lists, click Proofing —> 'AutoCorrect options'. Click the 'AutoFormat as you type' tab and in the 'Apply as you type' group, disable the 'Automatic bulleted lists' and the 'Automatic numbered lists' checkboxes. Here you'll also find settings for features such as converting straight quotes to smart quotes and converting email addresses and URLs to clickable links ('Internet and network paths with hyperlinks').

If the Word 2007 units of measure are inches rather than centimetres, click Advanced and from the 'Display Group', choose 'Show Measurements in Units of' —> Centimetres and click OK.

To display the vertical ruler when you go to View —> Rulers on the Ribbon, from the 'Word Options' dialog, enable the 'Show Vertical Ruler in Print Layout view' checkbox. A vertical ruler is useful when working with tables, as you can size the cells' width and height by dragging in the ruler.

Word 2007 doesn't have Overtype mode enabled by default, but you can enable it by selecting the Advanced group and ticking the 'Use the Insert key to control Overtype mode' checkbox. To configure Overtype mode to be the default, click the 'Use Overtype mode' checkbox.

If a feature doesn't exist on the Word 2007 Ribbon, add it to the Quick Access Toolbar. Open the Customize group and you can find icons grouped as 'Popular commands', 'Commands Not in the Ribbon' and 'All Commands'. Locate the item and click Add to add it to the Quick Access Toolbar. You can also add an item that's already on the Ribbon by right-clicking it in the Ribbon and selecting 'Add to Quick Access Toolbar'.

_WORK WITH THE RIBBON

If the Word 2007 Ribbon is too big and getting in your way, press Ctrl-F1 and it will shrink to display only the tab names. You can click a tab to open the Ribbon, select the desired option and then the Ribbon will disappear again. To recover it permanently, press Ctrl-F1.

OTHER HANDY FEATURES

To locate the Clipboard, click the Home tab and then the Clipboard flyout menu. The clipboard is shared among the Office applications and contains up to 24 items, each of which can be pasted into the document at the cursor position by simply clicking the option.
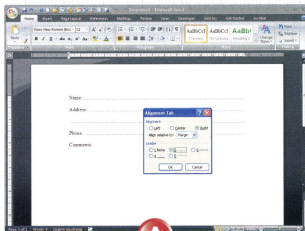
Alignment tabs adjust to match the page margins. First add the 'Insert Alignment tab' option onto your Quick Access Toolbar. Then to insert one, click the icon and set a Right tab with 'Leader style 2', for example. Press the Tab key to insert the tab. Repeat for each line that needs a tab. These tabs move when your margin moves.
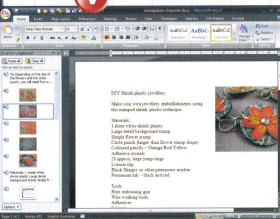
Use the 'No-Width Optional Break' character to specify where a long piece of text with no spaces can be split across a line break. To use it to break text such as blue/green, first click in front of the letter 'g'. Go to Insert —> Symbol —> 'More Symbols' —> 'Special Characters' —> 'No-Width Optional Break' and click Insert and then Close.

Create a PowerPoint quiz

Helen Bradley demonstrates how to combine ActiveX controls and some simple VBA code to create a quiz in PowerPoint.

This is the PowerPoint slide that lets the user type answers to the test questions and submit them.

There are lots of fun and practical things you can add to a PowerPoint presentation using simple Visual Basic for Applications (VBA) code. If you're creating a learning presentation, it may be useful to test how your participants have progressed by giving them a short test. Here, we'll show you how to create such a test in PowerPoint using ActiveX controls to gather the data, combined with some simple VBA to assemble and write the answers to a file on disk.

To start, in PowerPoint insert a new blank slide in a presentation using Insert —> 'New Slide'. From the Layout options, select a blank slide so there's plenty of room to create your test items.

To see the ActiveX tools you can use, go to View —> Toolbars —> 'Control Toolbox'. Click the Label tool and drag to create a label on the slide. Right-click it and select Properties. Set the **Caption** property to read **Your Name**. Click the TextBox control and draw a text box beside the label — this is where the user will type their name.

Create another label below this and set its **Caption** property to the first question in your quiz. For example, we used **What is the capital of France?** as our first question. Drag a text box beside this label. Continue to add labels for each of the questions and add a matching text box to the right of each label. If you're following our example, you'll need three questions and three answer boxes.

To format the Labels, select each in turn and from the Properties box, set the **Font** property with the font and font size of your choice. Finally, select a colour to use from the Forecolor list. Do the same for the text boxes to control the font, font size and colour of what the user types later on.

Add a CommandButton at the foot of the slide and set its **Caption** property to read **Submit answers**.

To add the code that will take the user-submitted answers and write them to a file on disk, double-click the 'Submit answers' button. This will open the Visual Basic Editor and place you between two lines of code, which should read: **Private Sub** **CommandButton1_Click** and **End Sub**. This is where you should type the following code:

```
Private Sub CommandButton1_Click()
    Dim myanswer As String

    'Open or create file for answers and write them
    Open ActivePresentation.Path & "\answers.txt"
For Append As #1
        myanswer = "Name: " & TextBox1.Text
        Print #1, myanswer
        myanswer = "Q1: " & TextBox2.Text
        Print #1, myanswer
        myanswer = "Q2: " & TextBox3.Text
        Print #1, myanswer
        myanswer = "Q3: " & TextBox4.Text
        Print #1, myanswer
        myanswer = ""
        Print #1, myanswer
        Close #1

    'Confirm results are submitted
    MsgBox "Your answers have been submitted"

    'Clear the answers
    TextBox1.Text = ""
    TextBox2.Text = ""
    TextBox3.Text = ""
    TextBox4.Text = ""

    'Move to next slide
    SlideShowWindows(1).View.Next
End Sub
```

Close the Commands toolbar and save the PowerPoint presentation. Then, run your presentation and fill in the form. Click the 'Submit answers' button and when the message box appears, click OK.

The code has comments in it to help you understand what it's doing. It first opens a text file in which to place the answers. If it doesn't exist, it's automatically created. The file is stored in the same location as the presentation and is called answers.txt.

The answers that your user typed in TextBox1, TextBox2, TextBox3 and TextBox4 are taken one at a time and placed in a string called **myanswer**, along with a prompt identifying the text as either the person's name or the answer to Q1, Q2 or Q3. The string is then written to the answers.txt file and when this process is complete, an empty line is written to the file and it is closed. Over time, if the presentation is run repeatedly and multiple students complete the test, the text file will contain each student's names and answers.

If you're familiar with VBA, you might wonder why we've used the **Print** statement rather than **Write**. The benefit of using **Print** is that it writes the data to the file without double quote marks, hence the results are neater.

Once the answers are written to the text file, a confirmatory message is displayed. When the user clicks the OK button on the message dialog, the text boxes are cleared so the answers don't remain in them, and the user is moved to the next slide in the presentation. The file answers.txt can be opened and read later on using a simple text editor such as Notepad.

_OTHER IDEAS & CONTROLS

A quiz like this is just one possible use of ActiveX controls and some simple VBA code. The example could be adapted to create a feedback form, a more sophisticated test, a note-taking application or other interactive elements for your presentations.

In addition to TextBoxes, you can use CheckBoxes and OptionButtons on your PowerPoint slides — they're all in the 'Control Toolbox'. CheckBoxes and OptionButtons store their data in the **Value** property, so to access the state of a checkbox, use **CheckBox1.Value** ; to access the state of an OptionButton, use **OptionButton1.Value** and so on. The result will be True or False, depending on whether the CheckBox or OptionButton is selected.

Capitals Quiz...

Your Name:	Helen Bradley
What is the capital of France?	Paris
What is the capital of Sweden?	Stockholm
What is the capital of India?	New Delhi

Submit Answers

Make a table of contents

Helen Bradley shows how you can easily create tables of contents for your Google Docs documents.

Whenever you have a document that's more than a few pages in length, a table of contents is a useful addition to help readers navigate it. This lists the topics in the document, allowing a reader to see quickly where everything's located and the scope of the document.

A table of contents feature was recently added to Google Docs. If someone is reading the document onscreen, they can click an item in the contents to be taken to that place in the document.

To create a table of contents in Google Docs, you should ensure that the headings in your document are formatted using the built-in heading styles. These can be applied using the Format menu or by selecting a heading and pressing Ctrl-1 for a first-level heading, Ctrl-2 for second-level and Ctrl-3 for a third-level one. These styles are what Google Docs uses to identify headings for the table of contents.

Once your document is formatted with these styles, click where you want the table of contents to appear and go to Insert —> 'Table of Contents'. From the dialog that appears, select the style for it, such as one with numbered headings. Then, click 'Insert

Table of Contents'.

To see how the links work, click on one of the heading items in the table of contents and then click the link in the 'Go to link' box that appears to move to that place within the document.

If you make changes to your document — either by moving content or deleting or adding new headings — you'll need to update the table of contents. To do this, click inside the table of contents area and click 'Update Now' from the small menu that appears. To move or remove the table of contents, click in the table and click the Remove option, then build it somewhere else if desired.

It's important not to change the table of contents itself, as it's created dynamically and any changes you make to it (such as format changes) will be lost when the table is updated.

A table of contents is saved with the document and printed with it, too. Before printing, check to ensure it looks the way
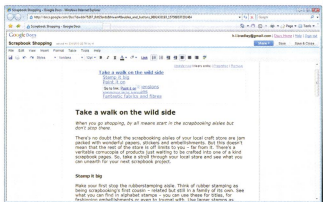
Google Docs offers an option for creating tables of contents from formatted headings in your document.

you want it to. On the printed page, clickable links are replaced with page numbers — for this reason, you should update the table of contents before printing in case any of the page numbers have changed.

This PowerPoint macro determines which shape is clicked and responds appropriately.

Photo fixes

Helen Bradley explains how to choose between Photoshop's correction tools when making large-scale photo fixes.

When using the Clone Stamp tool, it's best to clone onto a new empty layer.

It's often difficult to know which tool to use when you have an image that needs something removed from it. In this article, we'll show you some of your options for making fixes to an image in Photoshop. Many of these techniques work equally well in other photo editing programs.

Before you reach for the Clone Stamp tool, it's worth taking a minute to determine what's wrong with your image and what image area you have to fix it with. Consider the element that needs covering over or removing, and how much of the image is available for fixing it. If you have a lot of 'clean image' available for fixing an area, this may lend itself to one solution; if you only have a small amount of clean image to use, you may need to be creative using it. Having some clean image around a problem, such as good skin around a blemish, may lend itself to another solution. If you have a problem area that has a very definite pattern behind it, such as removing rubbish from a gutter, this is a consideration in applying a fix as you'll need some good, clean gutter to use.

While the Clone Stamp tool is good for some fixes, it does have its disadvantages. One of these is that you're typically forced to apply it using one of Photoshop's circular brushes. If you use a brush with a hard edge (a high hardness value), you'll see a distinct edge where you're applying your fix if the colours don't match exactly. So you'll often need to use a soft-edge brush (low hardness value) to get smoother results.

_FIX ON A NEW LAYER

Whatever fix you choose, if it's possible to apply it to a new layer in the image rather than directly onto the image itself, do so. Select Layer —> New —> Layer. Tools like the Clone Stamp and a simple copy-and-paste fix can be applied this way, although the Healing Brush, Spot Healing brush and Patch tool can't be used with this method.

To use the Clone Stamp tool, select the tool and brush shape to use. Adjust the Hardness value so you get a slightly soft edge to the brush. Hold the mouse pointer over the area of the image to sample from and then Alt-Click on it to set this as the sampling point. Make sure the Sample option on the toolbar is set to '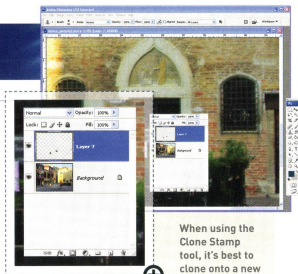All Layers', so you sample all the layers of the image when making the fix, which is vital if you're fixing on a new blank layer. Click on the problem area to fix it — do this rather than painting it.

In some instances, copying and pasting a part of the image over the problem area is a good alternative to using the Clone Stamp tool. To do this, select around the area you want to fix using the Lasso tool. Click Select —> 'Transform Selection' to put the selection in transform mode and drag it over an area of the image to replace it with. Click the 'Commit Transform' checkmark or press Enter to fix it. Select Edit —> 'Copy Merged' (or Edit —> Copy if this isn't available) to copy the image on the layers below. Go to Edit —> Paste to paste the copied piece of image into a new layer. Click the Move tool and drag it into position over the area to fix. If you don't have enough image to do this in one step, you can do it multiple times and then flatten the image to finish. Sometimes, for example, if you're selecting a piece of image such as sky, you can stretch the copied piece of sky to make it larger. Finish by using the Clone Stamp tool to blend the edges into the image.

_OTHER HEALING TOOLS

Other options for fixing problems include the Spot Healing Brush, Healing Brush and Patch tool, which share a position on the Tools palette. The Spot Healing Brush is a one-click solution for small blemishes. Start by clicking the image layer, selecting the tool and sizing the brush so it covers the problem area. Click once to remove the blemish. To use this tool, you need the blemish to be surrounded by 'good' image suitable for using as the fix.

The Healing Brush tool works in a similar
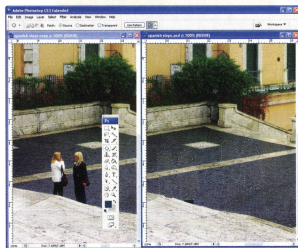
The Patch tool lets you select the area to fix, what to fix it with and then blends the result for you.

way, but requires that you first select an area to use for the fix. Select the tool, size the brush then Alt-Click on an area of the image to use. Then, click on the problem area and the fix will be applied and blended into the surrounding image. The difference between the Clone Stamp and the Healing Brush is that Photoshop does some texture blending when you use the Healing Brush tool, making the fix blend in better with its surrounds in many cases.

The Patch tool requires you to be working on the main image layer. Select the tool and click Source in the 'Tool Options' bar. Drag over the area to fix and then drag a selection over an area to fix it with. As you drag, you'll see a preview of the fix in the original selection. When you let go of the mouse, the fix will be blended into the image.

Use the Clone Stamp tool or copy and paste when you have distinct patterns to match when applying your fix. The Spot Healing and Healing Brush work well when there's good image content around the problem area, and the Patch tool can make a great job of blending your fix to match the surrounding image.

On the cover DVD

You'll find the video version of this tutorial on this month's cover disc.

Subscribe now...

and you could WIN a

The Coolest

FATHER'S DAY GIFT!

Simply by subscribing or renewing for yourself or your Dad to any of these great titles, you could win an adventure skiing holiday to Canada, valued at over $50,000!

Canadian winters are all about snow, especially at Big White and Silver Star Resorts. More than 7.5 metres of Mother Nature's finest, driest, champagne powder falls annually to create a truly spectacular world of snow ghosts (snow covered trees), snow bowls and mountain beauty. Enjoy wide open spaces on uncrowded slopes with mild temperatures, guaranteeing run after run of pure exhilaration.

Choose from any of these great magazines...

PC USER	TopGear	Money	Australian GEOGRAPHIC	Burke's BACKYARD	wheels	Rolling Stone	InsideCricket
12 issues - $69.95	12 issues - $69.95	11 issues - $45.00	4 issues - $49.95	11 issues - $45.00	12 issues - $79.00	12 issues - $63.00	7 issues - $46.95
SAVE $37.45	SAVE $37.45	SAVE $31.45	SAVE $9.85	SAVE $29.25	SAVE $26.00	SAVE $30.60	SAVE $8.25

Visit www.dad11.magshop.com.au

skiing holiday to **Canada!**

This exciting prize includes:

- Two return **business-class airfares** from Sydney to Kelowna, Canada, flying Air Canada (incl. ground transfers). Air Canada is the only airline to fly non-stop from Sydney to Vancouver daily.

- 10-nights hotel accommodation for two people staying in an Executive Apartment with private hot tub: 5 nights in Big White and 5 nights in Silver Star.

- Lift passes, private lessons and high performance rentals for 10 days.

- 10 days of tubing and skating.

- One hour facial per person at Beyond Wrapture Day Spa.

Valued at over $50,000

Big White SKI RESORT *IT'S THE SNOW*
Kelowna, BC Canada
bigwhite.com

SILVER STAR vernon, bc. canada
skisilverstar.com

AIR CANADA

magshop.com.au

or phone 136 116 and quote 'LF909PCU'

A PowerPoint alternative

Helen Bradley introduces SlideRocket, an online app for creating presentations and slideshows.

PowerPoint is looking long in the tooth when you compare some of its features against the likes of Keynote on the Mac. If you're looking for an easy-to-use program with Keynote-like transitions for your presentations, the new SlideRocket online application might be right for you. You can find it at **www.sliderocket.com**, where you can sign up for a free 30-day trial of the program. Once the trial has expired, you can continue using the free version or upgrade to one of two paid services, which offer more features.

One nice thing about SlideRocket is that it offers features missing from PowerPoint, such as smart transitions, including rotating cubes and reflections. It also offers effects for images, such as bevel and reflections, so you can quickly create interesting graphics.

Once you've registered and clicked to get started, select the Presentations tab and you can either create a new presentation or choose to import an existing PowerPoint presentation. You can do so by importing the slides as images, or you can convert the slides to SlideRocket slides, so you can then edit the pieces that make up the slide, such as the title text, images and charts.

In SlideRocket, you can store individual slides in a Library so you can use them in other presentations and share them. To do this, select Slide —> 'Add Slide to Library', type a name for the slide, add tags to identify it and then set permissions for its use.

To add slides to your presentation, go to Slide —> 'New Slide' or Slide —> 'Insert Slide from Library'. To apply a theme to your presentation, click File —> 'Choose Theme' and select one from those displayed. The step-by-step example below shows how to create your own custom theme with custom layouts — these are the equivalents of PowerPoint's Slide and Title Masters.

To add an image, chart or Flash movie to your show, choose the appropriate icon from the toolbar on the left. This takes you to the Assets panel, where you can use an existing asset or click 'Import Asset' to import your own content. Once you do this, your content is available for use in all your presentations. You have up to 250MB of space for storing your assets online.

To configure the transition from one slide to the next, from the 'Slide Properties' panel on the right of the screen, select a transition effect. Customise your choice by altering the speed and direction of the transition using the settings in the panel.

To preview your show, go to View —> 'Play from Start' or press F5. The presentation will play in the browser and when complete, you can exit the preview by clicking the 'Exit Preview' option in the bottom-right corner of the screen.

step by step CREATE A CUSTOM THEME
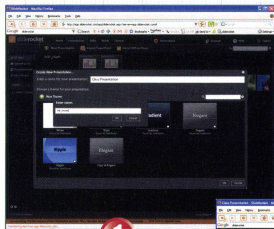
1 To create a theme, click the 'New Presentation' tab, type a name for your presentation and click 'New Theme'. Type a name for the theme and click OK. A new theme will be created for you automatically.

2 In the slide area, go to File —> 'Edit Theme' and from the bottom-right corner, select Backgrounds to edit the theme background. Here we added an image to the slide background and added a semitransparent filled rectangular overlay. To change styles, click Layouts and edit each layout in turn.

3 For our layouts, we reduced the size of the text blocks and altered the fonts. When you're done, click the 'Return to Slides' option in the bottom-right corner of the screen. Select Yes when prompted to save changes to the theme. Your new theme will then be a selectable option for all new slideshows.

Validate your application

Helen Bradley reveals how to add serial-based validation to your programs.

Most programs you buy require some sort of registration before you can use them. Readers Victor and Wilson Wang recently wrote in to *PC User* to provide a serial number validation feature for a Visual Basic (VB) program. We've taken their basic code and built this into a small application, which you can use to trial the feature and see how you might use it in your own applications.

Their design uses a validation code that's written to disk when the program is first registered, and which is read and checked whenever the program is launched. The code is stored in a file called actvt.cfg in a folder specified in the program.

To get started, launch Visual Basic 2008 Express and go to File —> 'New Project' —> 'Windows Forms Application'. Type the project name **frmactivate** and click OK. To Form1 add a TextBox, two Buttons, a PictureBox and a Label. Right-click the form, select Properties, change the Form1 **Name** property to **frmactivate** and set the **StartPosition** property to **CenterScreen**. Set the Form1 **Text** property to **Validate your program** and set the Label1 **Text** property to read **To unlock this program, type the validation code and click OK**. Set the Button1 **Text** property to **Cancel**. Set the PictureBox **SizeMode** to **Stretchimage**.

Add a module by clicking Project —> 'Add Module' —> Module, typing **myvariables** and clicking Add. Between the **Module Variables** and **End Module** statement, type this and then close the myvariables panel: **Public registered As Boolean = False** .

_CREATE THE CODE

Double-click the form to open the code screen. Type this text in between the **frmactivate_Load** and **End Sub** statements: **Button1.Hide()** . From the boxes at the top of the code dialog, choose TextBox1 and TextChanged, and add this code between the **Sub** and **End Sub** statements of **TextBox1_TextChanged** :

```
If TextBox1.Text = "6HGB486F" Then
    PictureBox1.Image = My.Resources.greentick
    Button1.Show()
Else
    PictureBox1.Image = My.Resources.redx
```

```
If Button1.Visible = True Then
    Button1.Hide()
End If
End If
```

The number in the first line is the serial number that will be used to register the program. Return to your form and double-click the OK button. Between the **Sub Button1_Click** and **End Sub** statements type:

```
If My.Computer.FileSystem.FileExists("C:\actvt.
cfg") Then
    My.Computer.FileSystem.DeleteFile("C:\actvt.
cfg", FileIO.UIOption.OnlyErrorDialogs, FileIO.
RecycleOption.DeletePermanently)
    My.Computer.FileSystem.WriteAllText("C:\
actvt.cfg", "actvt285jb48", True)
Else
    My.Computer.FileSystem.WriteAllText("C:\
actvt.cfg", "actvt285jb48", False)
End If
registered = True
starterform.show()
Me.Close()
```

This code writes the registration data to a disk file. In Windows Vista, it stores this in the C:\Users\Public\Documents folder; in Windows XP, it uses C:\ instead. Finally, double-click the second button and between the **Sub** and **End Sub** statements of **Button2_Click** , type **End** .

_ADD A STARTER FORM

Create a second form by selecting Project —> 'Add Windows Form', typing **starterform** as its name and clicking OK. Add a Label and Button to the form. Set the Button1 **Text** property to **Close** and remove all the text in the Label1 **Text** property setting. Double-click the form and in its **starterform_Load** event handler, type this:

```
If My.Computer.FileSystem.FileExists("c:\actvt.
cfg") Then
    Dim fileContents1 As String
    fileContents1 = My.Computer.FileSystem.
ReadAllText("C:\actvt.cfg")
    If fileContents1 = "actvt285jb48" Then
        Label1.Text() = "You are using a
registered" & Chr(13) & "version of the program"
        Button1.Visible = True
    Else
        Dim frmactivate As New frmactivate
        frmactivate.Show()
    End If
Else
```

```
    Dim frmactivate As New frmactivate
    frmactivate.Show()
End If
```

From the boxes at the top of the code screen choose **(Starterform Events)** and **Activated** , and add this code between the **Sub** and **End Sub** statements of **Starterform_Activated** :

```
If registered Then
    Label1.Text() = "You are using a registered" &
Chr(13) & "version of the program"
End If
```

Between the **Button1_Click** event **Sub** and **End Sub** statements, type **End** .

_ADD IMAGES

You'll need two small images, greentick and redx. Create and save these in your graphics software as JPEG images. In VB, go to View —> 'Solution Explorer', right-click frmactivate and select Properties —> Resources. Click the drop-down arrow beside the 'Add Resource' button and select 'Add Existing File'. Select the images and click Open. You need to change the names of the files by right-clicking them, choosing Rename and naming one **greentick** and the other **redx** . Select the Application panel and from the 'Startup Form' drop-down list, select starterform and close the panel. Next, double-click the Close button on the starterform and type the word **End** between the **Sub** and **End Sub** statements.

Save the project and run it. The starterform will appear first and if the application hasn't been activated, the Validate form will appear, prompting you to activate it. If you type the correct code into the TextBox, you'll see the greentick image appear as well as the OK button. Click OK to write the serial number to the disk file. The form will close and leave the starterform on the screen, this time displaying confirmatory text indicating the program has been registered. Click Close. In future, if you run the application you won't see the registration form again.

You can customise this routine for your own needs by providing a different serial number and by customising the starterform so it provides access to the program itself once the program has been registered.

Thanks again to readers Victor and Wilson Wang for the code and logic behind this application.

Rip, burn or back up

Ashampoo Burning Studio 2009 Advanced contains all the tools you need to successfully rip, burn and back up your files. **Helen Bradley** explains.

SPECIAL OFFER

For a limited time, *PC User* readers can upgrade to Ashampoo Burning Studio 9 and receive a big discount. This latest version offers the ability to edit and combine videos before burning them to DVD, plus many other new and improved features. From inside Ashampoo Burning Studio 2009, click the Internet menu and choose 'Upgrade to Ashampoo Burning Studio 9' to take advantage of this offer.

If you rip and burn music, need a backup utility or want to save movies in a playable format, Ashampoo Burning Studio 2009 Advanced has everything you need. This program is an all-in-one set of tools that can do everything from ripping an audio CD to burning an encrypted backup.

The ripping and burning functions are located in the 'Burn or Rip Music' options. Select this and you can rip an audio CD to WMA, WAV or MP3 format and save the tracks on your hard disk. Having done so, you can then burn tracks onto another disc — the program supports CD, DVD and Blu-ray discs. You can create an audio CD that can be played practically anywhere, which is the option of choice if you have an older player and need a conforming disc. You can even create a disc of MP3s that can

be played in a CD or DVD player with MP3 support, or burn a WMA disc for a player that offers WMA support.

If you simply want to play your music on another computer, use the PC option — this writes the files to a disc that works in a computer, but not in most CD players. If you're unsure which option to use, choose audio CD, as it's the most versatile.

The program can also burn movies to a CD using either the VCD or SVCD format for DVD players that offer support for these. You can also copy movies to a CD, DVD or Blu-ray disc so they can be played on a PC, and if you have the .vob, .ifo and .bup files needed to burn a video DVD, you can do that, too.

If you need a copy of a data CD, DVD or Blu-ray disc, the program can copy a disc, even if you only have a single drive in your

computer. The program copies the disc and then burns the data to a blank disc in the drive. Of course, to do this you'll need to have a blank disc of the type you're copying; for example, a CD to copy a CD, a DVD to copy a DVD and so on.

The 'Print and Design: Covers, Labels and Booklets' option is a tool for creating your own custom disc labels and CD inserts to professionally label your discs. Select the type of design to create and if you have a cover design already downloaded or created, click to choose that. Click 'Import Data' to import the information from the disc to add to the label. You can use a theme to decorate the cover, add other details and then print direct from the program.

step**by**step BACK UP FILES
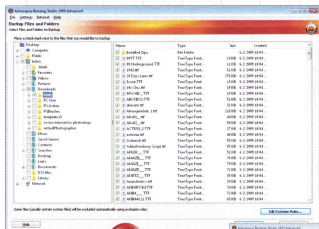
1 Select 'Backup or Restore Files and Folders' —> 'Backup Files and Folders'. From the folder list, locate the folders to back up and select all files in that folder. If you don't want a particular file to be included, disable the checkbox for that file.

Click on 'Edit Exclusion Rules' to create a rule to exclude files by type. Click New and select a file type to exclude from the backup — we chose to exclude .sit files. Click 'Add to Excluded Extensions', click OK and then Close. Any matching files will be excluded automatically.
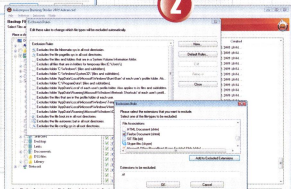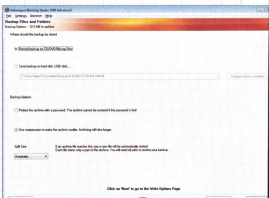
3 Click Next and choose to back up to CD, DVD or Blu-ray disc, or save to a hard disk or USB key. Select to add a password and to compress the archive, if desired. Other options include setting the size at which the archive is split, or leaving this set to Automatic. Place a disc in the drive, click Next and then start the writing process.

Total system security

Helen Bradley explains the nasties that PC Tools Internet Security 2009 can protect you from.

When you're surfing the internet or reading your email, your computer is vulnerable to a range of internet nasties. PC Tools Internet Security 2009 can help you clean up your computer if it's already infected and help you protect against your computer being infected in future. If you're unsure just what is at risk, let's look at the kind of infections your computer may be subject to.

Any time you're connected to the internet, your computer is at risk of being infected with malware such as spyware. Spyware is a class of applications that gather information about what you're doing so that someone, often with malicious intentions, can use this information without your permission. Similar programs include key loggers, which record the keystrokes you make. Someone with access to this data would potentially have access to your internet banking ID and password.

Some spyware applications are less threatening, but no less annoying. For example, adware programs display ads in pop-up windows or redirect your browser so you go to a site you didn't ask for. Likewise, some applications redirect your search page to the hijacker's page. Trying to reset your search page using the normal commands will have no effect on these programs. Other browser hijackers take control of your home page, replacing it with a page of their choosing, and again, these programs do this in a way that isn't easy to undo.

Other programs track the sites you've visited and provide this information to sites that use this to target advertising to you. Others might access your PC's modem to dial long distance at your expense.

Sometimes you'll know or sense that your computer is infected. It may run more slowly than normal, or perhaps you'll see the hard disk light flashing when you're not doing anything on your computer.

Other signs of problems are when you can't configure your own home page or search page for your browser, and when you see lots of pop-up windows telling you that you've won a prize or that your computer is infected and offering to fix it. Other indications might be new browser toolbars that you don't install.

In short, the list of internet nasties is long and the programs vary from being annoying to providing a significant threat to your personal privacy. PC Tools Internet Security 2009 can monitor your system so malware can't infect it, and it can help you remove any malware that's already on your computer.

## step by step CHECK YOUR COMPUTER

To protect your computer in future, enable the options for 'Anti-Spyware' and 'Anti-Virus' from the Status screen. Click the IntelliGuard button and enable this feature so it will continue to be proactive in protecting your computer. If you need all your resources for a while, you can deactivate IntelliGuard for a short period of time as desired.

1 If you suspect your computer might be infected, run a full scan, preferably overnight to give it plenty of time to operate. Click 'Start Scan' in the Status area to start the scan. When it's done, move the problem programs into Quarantine.

2
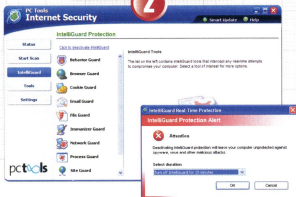
3 If your email inbox contains a lot of spam email, enable the 'Anti-Spam' option. This will help you identify spam email, as it adds **SPAM** to the subject line of suspect emails. Go to Settings —> 'Anti-Spam Settings' to adjust the level of protection used.

Buying books online

Gail Lipscombe reveals how to get the best book-buying deals online.

Google Books offers a unique way to search for books.

Search with Google Books

If you're looking for reading inspiration and want to do the ultimate book browse, Google Books (http://books.google.com) is the place to head. On the opening search page, Google Books displays four random titles to whet your appetite under each of the following headings: Interesting, Classics, Magazines, 'Highly cited' and a 'Random subject' (it was Etching when we visited). The selection changes each time you visit the home page. You can also search via the links on the left of the page: Fiction, 'Non-Fiction' and 'Random Subjects'.

Once you've decided on a path to follow, click on the link and start browsing. When you find a book of interest, click on it and you'll be presented with links to online bookstores that have it for sale (including Amazon and Barnes & Noble); you can click through to check the price and make a purchase if you wish. You'll also find links to read an overview of the book, book reviews and a whole lot more title-related information. Of course, you can also use the search box.

There are few greater pleasures than spending a couple of hours browsing through a good bookshop, but it's a pleasure very few of us have time to indulge in our increasingly busy lives. There's nothing nicer on a cold winter's day than to curl up on the couch with a good book and a hot cuppa. So, with the convenience of being able to shop at your leisure 24/7 online, it's no wonder readers are turning to online booksellers for their literary fix.

One thing you'll find when visiting the sites we've reviewed here is that many of them claim to be the 'biggest' online bookseller. Obviously, they all can't be the biggest, but they justify their claims by using different criteria, such as sales volumes, unique visitors, stock holdings and so on. However, the ultimate test of a bookselling site is whether it has the book you want at the right price and can deliver it within an acceptable timeframe.

_ BUYING TIPS

As with any online shopping, there are a few things you need to be aware of when buying books online. First up, you need to consider the issue of security. You won't actually need to worry about that in this instance, as every site we've reviewed here has a rigorous security system in place to handle your transaction.

You also need to consider the add-on costs when buying online, such as postage and handling. What might look to be a great price for a book at first glance may have the gloss taken off it once you add on the cost of delivery. You'll notice that delivery prices vary markedly across the sites we've reviewed

here, and if you can possibly take advantage of free delivery where it's offered, you can't really go wrong. While we're on the subject of delivery, if you need your book in a hurry, you should check the estimated delivery times to your area and whether there's an express option available; however, be aware that this will add to your total cost.

As well as searching dedicated online bookstores, don't discount online auction sites such as eBay (www.ebay.com.au) and OZtion (www.oztion.com.au) as a source of reading material. Both sites usually have a considerable number of books for auction at any given time (some with a 'Buy now' option), so they're worth a look. Also consider the department stores with an online presence, such as Big W (www.bigwentertainment.com.au), when looking for books.

Finally, if you're interested in more than just the cheapest price when buying books online, be sure to check out the added features on offer for a richer buyer experience, such as reward schemes, special member advantages, book suggestions, reviews and gift vouchers.

_ SHOULD I BUY AUSTRALIAN OR OVERSEAS?

Most of you will have heard of online bookselling giant Amazon (www.amazon.com). You can buy books from there, as well as from other overseas sites such as Barnes & Noble (www.barnesandnoble.com), Better World Books (www.betterworldbooks.com) and The Book Depository (www.bookdepository.co.uk) for delivery to Australia.

But is it worth it? Well, that depends largely on the currency exchange rate at the time you buy and how urgently you need the book you're after. Fortunately, Amazon gives you the option of viewing prices in Australian dollars, so you can then compare what you're up for against the asking price of local booksellers. Even though Amazon is the best known of the overseas online booksellers, in our random price searches, it was well and truly trounced by The Book Depository when it came to price, the seller that came up with the best price in five out of our six book picks.

One of the best ways to see whether it makes economic sense to buy overseas is to use a dedicated book price comparison site like Booko (www.booko.com.au — see 'Where's the best deal?' on page 99). This site does the price checking legwork for you when buying books online. As we've mentioned, you'll pay extra for a speedy delivery, but that could be well worth it if you are having trouble getting hold of a title in Australia.

Amazon and other overseas sites are also well worth a look if you're interested in books on a certain topic or by a certain author — because of our relatively small buyer base, many books don't make it to Australia at all.

There are many other smaller and specialist Australian booksellers online (some of which are listed in 'Other Australian book sites' on page 98), but by bookmarking the 10 sites we've reviewed on the following pages, you'll be well set up for a good, general book buying experience.

FISHPOND.COM.AU

WEB www.fishpond.com.au

A relative newcomer to the online bookselling space, there's a lot to like about Fishpond.com.au. Its guaranteed lowest prices will be a big attraction for the bargain-conscious and there's no compromise to be made on the variety of stock, with more than 2 million books on offer. Another attractive feature is the free shipping for orders over $50 — it's worthwhile putting off your purchases until you reach the magic total for that kind of saving, although it doesn't take too many books to rack up $50. You can do a quick search or drill down further using the advanced search feature if the quick search is unsuccessful. You can also browse for books via genre from the links on the right-hand side of the home page. Just above the genres, Fishpond.com.au lists the top 100 sellers for the last week for a bit of inspiration. You can also buy music and movies on the site.

PC User says: Large stock, great prices and free shipping — definitely one to watch.

95%

PC USER BEST BUY

DYMOCKS

WEB www.dymocks.com.au

You can search for books by keyword, author, title, subject or ISBN, or click on the Books tab on the home page to browse for books by genre. It's a more holistic experience for readers than other sites here. As well as traditional books, you can buy ebooks and audiobooks via download and on physical media, and Dymocks gives customers access to other book-related events such as book signings, launches, readings as well as wine and cheese evenings. You can also sign up to the Booklovers Club (it's free), where the books you buy attract reward points (five points for every dollar spent and a $5 voucher for 500 points). If you'd like to buy a book as a gift, but don't know what to pick, you can purchase a gift e-voucher, and a new wishlist feature lets you keep a list of books you'd like yourself.

PC User says: Not the cheapest, but it's a complete, easy-to-navigate resource.

90%

PC USER BEST BUY

ABBEY'S BOOKSHOP

WEB www.abbeys.com.au

Abbey's offers a good range of books across a wide range of genres, which you can browse by clicking on the appropriate category link from the home page, or by entering the title of a particular book, keyword or author in the 'Quick Search' box. Alternatively, you can do a more thorough search using the Advanced option. Prices on the site are very reasonable, placing them at the cheaper end of the range in this roundup, and delivery charges are average. An interesting addition is the Booktagger feature. It's an online bookshelf application where you can document the books you've read and share this reading history with others. You can also use it to track books you've loaned to others, create booklists, find people with similar tastes in books, build an online book group and more. You can also read the Abbey's newsletters online or have them emailed to you.

PC User says: Good prices and range of books, with a cool book group feature.

85%

ANGUS & ROBERTSON

WEB www.angusrobertson.com.au

Along with Dymocks, Angus & Robertson (A&R) is one of our best-known booksellers. On the A&R site you can search for books via keyword, title, author and ISBN, plus you can browse the collection of books by genre. You'll also find a number of links to reading recommendations based on reader demographics, such as books for children and top 10 books. Click on the 'What's On' tab to find out about book signings. At the time of writing, you couldn't buy gift vouchers online, but the feature was being developed and may be available by the time you read this. A&R also operates a reward system — you get one point for every dollar spent and a $5 voucher when you've accumulated 100 points, plus the chance to win instant prizes. It's free to join.

PC User says: Large stock, but not as easy to navigate as the Dymocks site.

85%

What is an ISBN?

You'll notice that almost all the sites in this roundup have ISBN as a search criteria option, but have you ever wondered what an ISBN is? Short for International Standard Book Number, it's a number that's assigned to each book published internationally as a unique identifier. Each book is given a series of digits (for books published prior to 2007, the number is 10 digits; books published since January 1, 2007, have a 13-digit ISBN), comprising identifying numbers for country, publisher and title, ending in a single validating number. If you search using an ISBN, provided you have the correct number, you can be sure you have the right book. Students are often given ISBN numbers for sourcing texts to make sure they have the right book prescribed for their course, as well as the correct edition of it.

SITES & SERVICES / TUTORIALS / EDUCATION PRODUCTS

BOOKTOPIA

WEB www.booktopia.com.au

85%

Booktopia really does have some great bargains — at the time of writing, it was selling selected titles at 80% off. You can search for books using title, description, author or ISBN, drill down deeper with the advanced search feature, or browse over 50 categories. If you're in the market for *For Dummies* books, this is the place to go, as there are 61 pages of them! Booktopia has gift e-vouchers on offer if you're looking for a gift for someone whose reading preferences you're unsure of, but if you do know the recipient's tastes and favourite authors, check out the 'Gift Ideas' pages for recommendations, and there are suggestions for book gifts based on age. You can sign up to the site (for free) to track your purchases and keep a wishlist, plus you can sign up for the newsletter and receive the site's blog updates via RSS. The delivery costs are also quite reasonable.

PC User says: Has great prices on sale books and a wide range of genres.

BOOMERANG BOOKS

WEB www.boomerangbooks.com.au

80%

Boomerang Books specialises in Australian books, but doesn't deal in them exclusively. It stocks 1.2 million books from a wide range of genres, which you can search by title, description, author and ISBN. You can also browse through the extensive subject categories or special listings for Bestsellers, 'Books from Movies', 'Bargain Basement' and 'Book Awards'. Prices are routinely 10% off the recommended retail price (RRP). Once a month, the site offers a 20% discount on the RRP, so it could be worth waiting for that date to come around before ordering; that is, unless you're lucky enough for the book you're looking for to end up in the 'Bargain Basement', where discounts are far more significant. Sign up for the Boomerang Books e-newsletter and you'll get a $5 book voucher for your trouble, plus notification of the 20% discount days on the site. You can also sign up to the Boomerang Books blog via email or RSS feed.

PC User says: A great site for buying Australian books, plus good newsletter bonuses.

SEEKBOOKS

WEB www.seekbooks.com.au

80%

On this site, you can search 1.2 million books from 50 categories with the 'Quick Search' feature, or you can use the 'Advanced Search' tool. You can also browse for books using other criteria such as bestsellers, books in the movies, award-winning and more. There are gift e-vouchers, which make great last-minute gifts, and a loyalty scheme, where you get a point for each dollar spent, which you can redeem for a $10 voucher when you get 200 points. This may seem generous, but it equates to the Dymocks and A&R offerings, and prices here are a bit higher, too. There are other redeeming features, though; for example, Seekbooks has now added used books and Seniors Card holders get an extra 5% discount on all purchases. Delivery charges are very reasonable, as they only charge for the first book, so you'll come out in front with multiple buys.

PC User says: Good shipping costs, but prices are mostly higher than other sites.

GLEEBOOKS

WEB www.gleebooks.com.au

75%

Winner of the 2008 Independent Bookseller of the Year Award for its physical store, Gleebooks hasn't quite nailed it with its online presence. It isn't the easiest of sites to navigate; while it has both Quick and Advanced search tools, it doesn't lend itself to easy browsing. However, it does offer some interesting extras such as a monthly e-zine, which features books news, new releases, reviews, offers and competitions. Unfortunately for Gleebooks, it didn't fare well price-wise when it came to our random book search, featuring in two of our six picks as the most expensive option. At $10 postage, delivery also came in at higher than average in the roundup. You can buy gift certificates on the site, which you can have posted to yourself or someone else, but no e-vouchers to bail you out as a last-minute present. Gleebooks distinguishes itself from the other sites here with the inclusion of an antiquarian book section.

PC User says: The site is difficult to browse and a little pricey, but its e-zine is a nice inclusion.

Other Australian book sites

These are some smaller and specialist Australian booksellers.

* BuyAustralian — http://buyaustralian.com/books.htm
* Emporium Books — www.emporiumbooks.com.au
* Shearer's Bookshop — http://shearersbookshop.com.au
* QBD The Bookshop — www.qbd.com.au
* Readings — www.readings.com.au
* CookBooks.com.au — http://cookbooks.com.au
* Chaos.com — http://chaos.com/home/6841.html
* The Co-op Bookshop — www.coop-bookshop.com.au
* ABC Shop — http://shop.abc.net.au

THE NILE

WEB www.thenile.com.au

75%

The Nile has a number of nice features, including a featured author and literary quote each month, staff picks, an online book club group in its forums and an interesting blog. Another plus is its text book section. However, in our random price searches (see the table below right), it didn't fare too well. It was the most expensive in two out of six choices. This might be a turn-off if price is a major consideration, but if it's not, you'll like the other features already discussed. It has quite reasonable delivery rates and offers free shipping for orders over $65, but this could be offset by the higher prices, depending what you buy. There was 30% off the RRP of *Lonely Planet* books at the time of writing, which is a good buy if you're in the market for travel guides.

PC User says: Some great features, but it's pricier than most others here.

COLLINS BOOKSELLERS

WEB www.collinsbooks.com.au

70%

Collins is another fixture in the bricks-and-mortar bookseller space in Australia that has taken its services online. Despite its good stock range, we found it hard to navigate — some of the site's features were buried on sub-pages. Trying to search the site to unearth these features, we became annoyed by the lack of a link back to the home page, and the home page was too occupied with text. The prices were fairly average, although the books on offer covered a good range of genres, searchable via almost 50 categories by title, author, description and ISBN. You'll also find staff recommendations for books to read, and you can purchase gift e-vouchers for last-minute gifts. If you're after second-hand books, they've recently been added to the Collins online offerings.

PC User says: Difficult to navigate, which detracts from its good stock range.

Booko

Buying Books in Australia?
Post the Best Deal on Booko

Price comparison web site Booko will help you find the cheapest bookseller.

Where's the best deal?

The cover price on a book doesn't necessarily make it the best buy. That's where book price comparison site Booko (**www.booko.com.au**) can help. Because it's a dedicated book price search site, you don't have to wade through the pages and pages of results you'd have to when using a general price comparison site. It searches over 30 online booksellers, including the major overseas online book sites that ship to Australia, so you can be sure you're getting the very best price; of course, you'll still need to factor in the issues of delivery times when making a purchase.

To do a price comparison, just enter the title, author or ISBN in the search box and click Search. You'll then be presented with a list of online booksellers that have your book in stock. You'll also be given a price in Australian dollars (using up-to-date exchange rates in the case of overseas sites), which includes standard delivery charges. Once you've made your choice of seller, click on its link to be taken to the site to complete your purchase.

When researching this article, we picked six titles at random across different genres to get a feel for pricing. We were genuinely astounded at the range in prices (see the table below for our findings) and one of the overseas sites, The Book Depository (**www.bookdepository.co.uk**), scooped the pools for the cheapest price for five of our six random picks. However, because our search boxes were picked at random, these results should be used as a guide only when choosing an online bookseller, as searching a different set of titles could produce a very different outcome.

Another thing you'll notice when you search in Booko is that there are many different printings of the same book — they're essentially the same book, but these multiple printings are often published for a particular region. This very often affects the price; most editions published specifically to be sold in our region tend to be much more expensive than, say, editions published for the US market. Check prices on all the versions on Booko and you can save yourself a considerable amount of money.

Social networking

If you'd like to read opinions from other readers and interact with them, you'll find recommendations on the web. You can even join an online book group.

Book recommendations
* Bookarmy — **www.bookarmy.com**
* Whichbook — **www.whichbook.net**
* ThisOneNext — **www.thisonenext.com**
* BookBump — **www.bookbump.com**
* The Book Seer — **http://bookseer.com**

Online reading groups
* The Book Clique Cafe — **www.readinggroupsonline.com**
* Books-Clubs-Resource.com — **www.books-clubs-resource.com**
* Ipswich Library Online Book Clubs — **http://library.ipswich.qld.gov.au/beyond/eclubs.htm**
* Book Group Online — **www.bookgrouponline.com/forum**

BOOK PRICE COMPARISONS

Author	Title	Cheapest**	Dearest**	Price difference
Dan Brown	Angels and Demons (paperback)	The Book Depository, $12.06^	The Nile, $29.99	$17.93
Gordon Ramsay	Gordon Ramsay's Sunday Lunch	The Book Depository, $27.41^	Melbourne Uni Bookshop, $56	$28.59
Tim Winton	Breath	The Nile, $24.99	Gleebooks, $34.95	$9.96
Carolyn Keene	Nancy Drew: Dressed to Steal	The Book Depository, $11.35^	The Nile, $33.49	$22.14
Eileen Mulligan	Little Goals, Big Results	The Book Depository, $18.93^	Gleebooks, $39.95	$21.02
Gregory Georges & Kevin L. Moss	50 Fast Digital Camera Techniques with Photoshop Elements 3	The Book Depository, $32.19^	Dymocks, $54.90	$22.71

*Books chosen at random from a variety of genres. **Includes standard postage. ^Based on an exchange rate of $1 = £0.475.

Compare your options online

Gail Lipscombe looks at comparison web sites that will help save you time and money.

In the preceding feature on buying books online (see page 96), we have discussed how online comparison site Booko (www.booko.com.au) could save you considerable time and money by doing all the leg work for you to find the best book deals. Well, Booko is only the tip of the iceberg when it comes to sites that can help you make the best possible choices. Whether it's saving money on utility bills, finding the best price on a new lawnmower or getting the best broadband plan for your needs, the following sites will do all the hard work for you and help you make an informed decision.

_MULTI-CATEGORY COMPARISONS

ShopAround
www.shoparound.com.au
Compares electricity and gas, home loans, personal loans, credit cards, savings and insurance.

Switchselect
www.switchselect.com
Provides price comparisons for broadband, utilities, phone and VoIP, finance,

insurance, pay TV, moving home, shopping and travel.

Help Me Choose
www.helpmechoose.com.au
Compares home loans, credit cards, life insurance as well as health insurance.

Rate Detective
www.ratedetective.com.au
Searches for the best deals on

home loans, insurance, broadband, electricity, credit cards, personal loans, savings accounts and travel insurance.

CANSTAR CANNEX
www.canstar.com.au
Compares interest rates and star ratings for home loans, credit cards, credit card rewards, savings accounts, term deposits, car insurance,

home and contents insurance, plus health insurance.

_GENERAL SHOPPING

MyShopping.com.au
www.myshopping.com.au
Compares products in 33 categories from clothing to appliances and fragrances.

Shopping.com
http://au.shopping.com
Finds the best prices for health and beauty, computers, toys and sports, electronics, homewares, services and more.

AusPrices
www.ausprices.com
Compares prices on computer and photography equipment, electronics, jewellery, household appliances and flowers.

Shopbot
www.shopbot.com.au
This web site searches for deals

on computers and accessories, household appliances, fashion and lingerie, wine and gifts, electronics, video games, health and beauty, and sports and fitness.

ShopFerret
www.shopferret.com.au
This site compares electronics, computers, toys, sporting goods, home and garden, shoes, clothing, health and beauty products.

Get Price
www.getprice.com.au
Shows price comparisons on computers, electronics, home and garden, sports and travel, clothing, gifts and wine, books, DVDs, cars and accessories, toys, health and beauty, adult and financial services.

ninemsn Shopping
http://shopping.ninemsn.com
Compares prices on a huge range of consumer goods.

_ALCOHOL

Boozle
www.boozle.com.au
Searches thousands of liquor stores to find alcohol at the cheapest price closest to where you live.

_TELECOMMUNICATIONS

youcompare
http://youcompare.com.au
Compares broadband, mobile phone, home phone, pay TV plans, with energy plans coming soon.

Broadband Buddy
www.broadbandbuddy.com.au
Sifts through ADSL, wireless, cable and satellite broadband, plus VoIP plans.

Whirlpool Broadband Choice
http://bc.whirlpool.net.au
Compares broadband plans.

_FINANCE

CreditCardFinder
www.creditcardfinder.com.au
This comparison site takes the pain out of choosing a credit card by searching on a range of criteria including interest rates and rewards.

Money AU
www.money-au.com.au
Compares a wide range of financial products including credit cards as well as a variety of loans.

Mozo
http://mozo.com.au
Finds options for credit cards, debit cards, home loans, car loans, personal loans, savings accounts, term deposits and bank accounts.

RateCity
www.ratecity.com.au
A comparison site for credit cards, home loans, savings accounts, car loans, personal loans, car insurance in addition to transaction accounts.

Credit Card Offers
www.creditcardoffers.com.au
This site provides a look at what Australian credit card providers have on offer.

InfoChoice
www.infochoice.com.au
Compares home loans, savings and term deposits, personal loans, credit cards, transaction accounts, investments and brokers, and small business banking. Life insurance has recently been added.

_ENERGY

GoSwitch
www.goswitch.com.au
Compares gas and electric prices and plans.

_INSURANCE
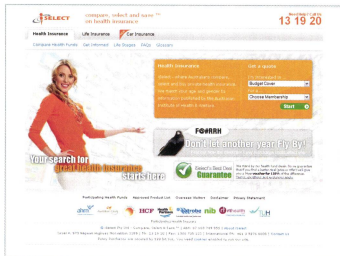
iSelect
www.iselect.com.au
Compares private health insurance plans.

PrivateHealth
www.privatehealth.gov.au
An Australian government site that compares health insurance.

moneytime
www.moneytime.com.au
This web site compares private health insurance plans.

TravelInsurance.com.au
www.travelinsurance.com.au
Offers a range of options for travel insurance policies.

Insurance Watch
http://insurancewatch.com.au
A comparison site covering insurance products for life, mortgage, income protection and trauma.

_TECHNOLOGY

staticICE
www.staticice.com.au
At the time of writing, this site was searching 884,193 gadgets from 262 Australian retailers.

TechWatch
http://prices.techwatch.com.au
Searches for the best prices on technology equipment.

OzPriceGuide
http://ozpriceguide.com
Compares prices on DVD burners, digital cameras, scanners, LCD monitors, inkjet and laser printers, motherboards and video cards.
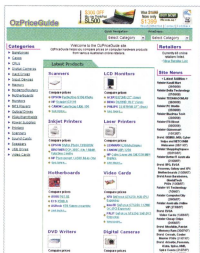
PriceSpy
www.pricespy.com.au
This site provides a comparison of prices from a large selection of Australian online computer parts retailers for a variety of tech products.

Top 30 web sites

Gail Lipscombe reveals our monthly guide to 30 useful and interesting web sites.

_WORLD WAR II FROM 1939-1945

Australian Women's Land Army
www.cultureandrecreation.gov.au/articles/womeninwartime

There are plenty of sites dealing with World War II (WWII), but the majority of Australians spent the war years here at home. The work of women on the home front, particularly in the Australian Women's Land Army, is one area of the war effort that most Australians know little or nothing about. With such a large number of men away at war, women began occupying non-traditional roles. You can read all about how women worked on farms to address the shortage of labour in country areas, where sometimes almost the whole male population of a town had signed up for war service.

Service roll
www.ww2roll.gov.au

For those who have family who served in WWII, this site is a must-visit. You can search the Nominal Roll service records by name, service number, honours and place (of birth, enlistment or residential locality at enlistment), and for family historians, some of the details to be found in these records will prove invaluable in your research. Once you've found your person of interest, you can create a certificate from the records, which you can then print out. You can also click on the 'Get help with the certificate' link for explanations of the information the record contains.

Australia's War 1939-1945
www.ww2australia.gov.au

This site is jam-packed with information on Australia's involvement in WWII, including original documents, photos and posters. There are also multimedia files you can watch and listen to, including Prime Minister Menzies's announcement to the Australian people that Australia had joined the war. You can read all about the details of the different campaigns that Australian troops were involved in and what life was like on the home front during the war years. As well as being a fascinating social resource, this site provides valuable information for

The Australian Women's Land Army is an area of the war effort that most Australians know little or nothing about.

students studying modern history.

Australian War Memorial
www.awm.gov.au/atwar/ww2.asp

Here's another great social and academic resource for those with an interest in Australian history. You'll find an overview and more detailed information on Australia's involvement in other wars, a month-by-month timeline of significant events during WWII, educational resources, and details of events and exhibitions at the Australian War Memorial. There are also some impressive online exhibitions on the site. The site's blog is also worth a visit, as there are regular posts on lesser-known items of interest from the war years, and merchandise is available for sale at the online shop.

Lesser-know facts
http://tinyurl.com/f6ubz

If you're interested in delving a little further into WWII, beyond the major battles, which are well documented both online and offline, then you'll find this site fascinating. Dedicated to all those who took part in WWII, the site reveals many of the smaller events and stories of the war years — most are less than monumental when viewed in isolation, but they had a significant impact on events. The lesser-known factors revealed here include the story of war brides, the part animals played in the war, and incidents of massacres and friendly fire. Be sure to check out the links at the bottom of the page for more fascinating facts.

_WINTER SPORTS

Aussie rules
www.afl.com.au

Australia's homegrown football code enjoys huge support across the country. On the official AFL site, you'll find everything you need to know about the game and the current season including the latest news, player profiles, game results and statistics, competition rankings, video, audio and more, club by club. You can also kit yourself out in the latest team supporters' gear and buy other merchandise, such as photos, limited edition books and framed prints from the online shop on each club page.

Rugby league
www.nrl.com

On the official site of the NRL, you'll find all the information you could ever possibly want to know, both for the league as a whole and for each individual team. The league ladder and individual top scorers table can be found on the home page, along with video highlights. You can also click on the tabs for individual teams at the top of the page to get info and stats for your favourite one. Games can also be streamed live to your PC for viewing. You can sign up to become a site 'insider' and participate in the tipping competitions, view exclusive video, get special member offers and more.

Netball
www.netball.asn.au

On Netball Australia's web site, you can find out the rules of the game, get an explanation of all the positions and learn a little bit about how the game has evolved over time. There's a calendar of upcoming games in the various competitions, the competition league ladder, and the different squad members and their profiles. For info on junior netball and how to get involved, click on Development —> 'San Remo NetSetGO!'. You can also sign up for a monthly e-newsletter and locate your nearest netball association and its contact details from the home page.

Soccer
www.footballaustralia.com.au

It's known as football elsewhere in the world,

but it will probably always be soccer to Australians. After decades of being overshadowed by the top three football codes here, the game has taken on a new popularity in recent years with the launch of the A-League and the Australian team's performances at the 2008 Olympics and in the current World Cup preliminaries. On this site, you'll find the latest news on the national and A-League teams, plus the latest international information, competition results, exclusive videos and more. You can also get behind the Australian bid to host the FIFA World Cup in 2018.

Skiing
www.ski.com.au
It might come as a big surprise to many, but not everyone likes their winter sports played on grassy paddocks. According to internet monitoring service Hitwise, ski.com.au is the number one online destination for powder hounds and mogul maniacs. Here you'll find live webcam vision of the major ski fields in Australia and New Zealand, news on resorts and runs, weather and snow reports, plus accommodation and equipment deals. If you want to meet or keep in contact with other skiers regarding pertinent topics, hop onto the site's forums.

_HAVE A GOOD LAUGH ONLINE

Joke site links
www.blackstump.com.au/clean-funny-jokes.htm
Web site portal Beyond the Black Stump has links to more than 200 joke and humour sites on the net, so if you can't raise a chuckle from this lot, then you don't have a funny bone in your body! Whether you're looking for a witty message for your answering machine, wacky excuses for just about any occasion, or just some good jokes to tell at the next family BBQ, you're sure to find something in this lot to suit. The site's URL suggests that all the links here are to jokes that are clean, and certainly all the ones we looked at were inoffensive.

cleanjokes4u
www.cleanjokes4u.com
This site has gathered jokes from all over the internet in a collection of clean jokes you could safely tell your mum or nanna. The home page has one randomly generated joke displayed, plus links to the latest 10 posted jokes, links to other 90 under selected jokes and links to other suitable joke sites. If you've got a favourite joke that always has your friends in stitches when you tell it (don't forget, it has to be clean) and it's not

A collection of clean jokes you could safely tell your mum.

already on the site, you can submit it to be considered for inclusion if you think it would be a good addition to the collection.

jokesclean
www.jokesclean.com
This site has lots of funny quotes as well as regular clean jokes, divided into over 20 categories. You'll find the usual suspects here, like blonde jokes, men versus women jokes and jokes poking fun at minority groups and stereotypes. However, there are also some really cute and funny quotes here, such as Miss Piggy quotes, funny responses from young school children, and hilarious puns and one-liners. Pay this site a visit and you're bound to find some gems to add to your joke repertoire.

A joke a day
www.ajokeaday.com
This site sends out 20 million monthly emails to over 90 countries, so that's a pretty good endorsement of its contents. You can sign up here for a daily joke to be sent to you via email, and you can read the day's joke and those for the last seven days and before. All jokes on the site are clean and politically correct. Each joke has a 'Send This Joke' button at its conclusion, which you can click to forward it to a friend via email. If you have a favourite joke that's not already on the site, you can submit it and if it's published, you get credited.

Laughter is the best medicine
http://tinyurl.com/rcgj7
If you think humour is just a bit of fun, check out this article to find out the health benefits of a good belly laugh on both your mind and body. It relaxes the mind, boosts the immune system, triggers the release of endorphins (the feel-good chemicals in the brain) and protects the heart by improving the function of blood vessels — imagine how many pills you'd have to take to get all that! And then there are the social benefits. You can also find out here how to best bring some humour into your life.

_HEART HEALTH

Heart Foundation
www.heartfoundation.org.au
As you'd expect from the web site of the premier body concerned with heart health, the Heart Foundation's online resource provides an absolute wealth of information on heart disease and how to avoid developing it. You'll find out all about the lifestyle factors that increase your chances of developing heart disease and the warning signs of a heart attack, plus you'll get advice on healthy eating, yummy heart-friendly recipes and the best exercise for keeping your cardiovascular system in top shape.

All about heart health
http://tinyurl.com/o995b4
The Victorian Government's Better Health Channel is one of our favourite sites because it covers so many health topics in easy-to-access language, and its information on heart health is no exception. You can find out all about what you should be eating to keep your heart healthy, what you need to do to keep your heart healthy as you age, and how you can get your kids active to set them up for good heart health in adulthood. You'll also find advice on exercise, lifestyle risk factors, heart and related medical conditions and treatment. You can also take a quiz to assess your risk of heart problems.

Go For Your Life
http://tinyurl.com/pcqja2
Are you at risk of heart disease? Find out by taking the quiz on the Go For Your Life site, a Victorian Government initiative to promote healthy eating and increase levels of physical activity. You can also print out a fact sheet to do the quiz offline or fill in an online form to send the quiz to a friend. If you score less than 19, you should read the other articles on the site to find out what you need to do to lower your risk. The 'Tip Sheets' link also has interesting articles for the whole family.

Helping your heart
http://tinyurl.com/oewtvs
The Victor Chang Cardiac Research Institute site has an excellent section on helping to keep your heart healthy, with a detailed checklist of what you should be eating, drinking and doing to maximise your heart health. You'll also find a featured heart-healthy recipe from the Victor Chang Cardiac Research Institute cookbook, *Fresh & Healthy*. The recipe is regularly changed, and you can buy a copy of the book from the site. You can also read all about how the heart functions, heart disease and the Institute's latest research.

Exercise for a healthy heart

http://tinyurl.com/ota7j5

Exercise is universally recognised as one of the biggest contributors to good cardiovascular health. This WebMD article explains the benefit of exercise in keeping your heart healthy and advises on the best types of exercise to achieve particular goals. It discusses how often you should exercise and what exercises to include in your fitness program. For people with limited mobility, there are even exercises you can do while sitting down. There are also guidelines to follow so you don't overdo it, and tips for sticking to your exercise regime.

_KIDS' VIDEOS

KidsTube

www.kidstube.com

This video-sharing site is designed especially for kids, and all the user-generated content is monitored for appropriateness by the site staff, who are all parents or grandparents. Kids are encouraged to create their own video and upload it to the site for viewing by other kids. Site members can then comment on posted videos and interact with others in the forums — comments there are also monitored for offensive content. The site holds weekly contests, which begin each Monday, where kids can submit video on a set topic. Membership is free, but parental permission is needed.

KidMango TV

www.kidvideos.com

KidMango TV has video episodes of its kids' shows available for children aged up to 12 to watch online. The video from the shows is divided into age-appropriate sections: Juniors for preschool children, Kids for the four to seven-year-olds, and Maniacs for children from eight. To find more episodes of your favourite shows (there are more than 100 on offer) check out the 'All Access' section. In the adjoining box, you can also see which shows are most popular with site visitors. There are so many on the site you might see some you haven't watched yet.

Totlol

www.totlol.com

Powered by YouTube, this video-on-demand site is community moderated to deliver a huge range of child-safe video for kids under 13. Parents can make recommendations for videos they discover on YouTube that they deem appropriate for pre-teens. Parents registered on the site (it's free) can take advantage of parental control tools to lock their kids out of the participation features on the site and clicking on outgoing links

All the user-generated content is monitored for appropriateness by the site staff on KidsTube.

to be assured they're only viewing content that parents approve of.

Common Sense Media

http://tinyurl.com/qns89x

The Common Sense Media site contains reviews of web sites suitable for kids. Parents and their children can recommend and rate sites as well as the site's editors. In addition to kid-safe video sites, you can find sites for social networking, games, education, blogging, fan sites, music and more. You can search for recommended sites by genre and/ or by age group — at the time of writing, there were 14 video site reviews, more than enough to keep the kids busy for a while.

ABC Kids Video Lounge

www.abc.net.au/broadbandkids

This is a must-visit site for small fans of ABC Kids' TV shows. The Video Lounge lets children watch episodes from shows such as *Bob the Builder*, *Bananas in Pyjamas*, *Pop Pups*, *The Wiggles* and *Play School*. You can choose to play the video in one of two speeds, which means you can still watch them even if you're on a dialup connection. You can choose to have site character, Mixy, present you with a selection of shows, or just choose a particular one to watch. You'll need either RealPlayer or Windows Media Player and a Flash plug-in, which are available from the site.

_BEST LOCAL SITES FOR THE MONTH

Gourmet meats online

www.butcherman.com.au

Time-poor Sydneysiders can now buy restaurant-quality meats at the best possible price without having to leave home. You can purchase everything from mince to game meats on the Butcherman site. It also provides a range of recipes for cooking up super meals with your purchases and helpful advice on meat preparation and cooking, such as how to cook the perfect steak. Check the site for delivery areas and times, and sign up for its weekly specials newsletter.

Free sport tipping

www.footytips.com.au

OK, so the footy season is nearly done and dusted, but despite its name, this site lets you tip the sports results for a variety of sports for free. You can test your tipping expertise in competitions for NRL, AFL, Super 14, A-League, English Premier League, the UEFA Champions League, Cricket and more, including international matches. There's also a fantasy competition that lets you pick your dream team and get points based on the individual players' performances. You can organise your own workplace tipping competition on the site, or join an existing one (membership is free).

Gumtree classifieds

www.gumtree.com.au

Whatever you're looking to buy, sell or trade, you're bound to find a market for it here. Gumtree has sites based all over the world, making it a must-visit destination if you're going to one of the countries covered and need to find somewhere cheap to stay or pick up an inexpensive car to travel around in. The Australian site has separate pages for each capital city and separate listings for 'Real Estate', Pets, Cars, Boats, Dating, Jobs and 'Business Services', plus there's 'Stuff for Sale', 'Swap/Trade', Events and Freebies categories. It's free to list your items.

Get rewards online

www.pureprofile.com

Register for free on this site to get paid for online activities such as completing surveys. You need to provide a few personal details to create a profile, so companies can pay you to view and respond to messages about services targeted to your interests. Companies don't have access to your personal details, just your demographics, so they get to conduct targeted research and your privacy is preserved. If you refer a friend to the Pure Profile site and they sign up, you'll receive payment once they start to earn.

Buy wine online

www.cleanskins.com

Buying cleanskin wines is a great way to get a good drop for a good price — cleanskins are wines from large and small wineries (often overruns) that are sold much cheaper (up to 50%) because they don't bear a winery label. Join the site's mailing list to receive notification of site specials and the chance to win a free case of wine. Delivery to most areas is only $6 per crate and there's a money-back guarantee if you don't like the wine. As well as great bargains, you'll also find lots of general wine and wine-making information.

HOW TO BUY AN
LCD TV ONLINE

With more and more families opting for a 'big night in' these days, choosing a TV is serious business – after all, it is the focal point of the whole in-home entertainment experience. You'll find all the help you'll need to find the best LCD TV at a great price at www.bigbrownbox.com.au – and delivery is free!

CHECKLIST

TRUE HIGH DEFINITION A MUST
- There's been a lot of confusion in the marketplace about what constitutes 'high definition', but you should look for a screen resolution of 1920 by 1080 pixels for the best possible picture quality.

SPEED MAKES A DIFFERENCE
- An LCD TV's screen response time, measured in milliseconds (ms), together with its Hertz (Hz) rate, determines the fluidity of the viewing experience – the lower the number of milliseconds and the higher the number of Hertz, the smoother the onscreen action.

SCREEN BRIGHTNESS
- The brighter the screen, measured in 'candelas per square metre' (cm2), the better the output. You should look for an LCD TV with a screen brightness of over 400cm2.

CONNECTIVITY
- Your new TV will need to connect happily to your existing devices and any new ones you might have on your shopping list, so look for one with the maximum number of connectivity options.

STYLE IT UP
- While picture quality is integral to a great viewing experience, the family TV now needs to deliver on the style front as well. LCD TVs feature a slim, sleek profile that will enhance any décor.

A comprehensive range of connectivity options ensures that all your devices will connect happily to your new TV.

LG's LH50 series features a 200Hz frame rate, 2ms response time and a screen brightness of 500cm2 to deliver exceptional viewing.

The LH50 series' screen resolution of 1920 by 1080 pixels delivers true high definition TV.

A slim profile and sleek finish make the LG LH50 series as much a piece of furniture as an entertainment device.

BIG BROWN BOX .com.au ™

What's in the Big Brown Box? ™

The rise of the answer engine

Rose Vines looks at Wolfram Alpha, a new web site that takes a different approach to web searches.

Google has done a fine job of hogging the search engine spotlight for a number of years, relegating its competitors to a game of catch-up. It's therefore not surprising that the launch of something quite different in the way of search engines should set bloggers aflutter and lead to some rather silly speculation about a 'Google killer'.

Wolfram Alpha is no Google killer, nor was it intended to be. In fact, it's not even a search engine in the traditional sense. It's an answer engine. Feed Google, Microsoft Bing or Yahoo! a search query and out pops a list of relevant sites. It's up to you to dig through those sites to find the specific information you're seeking. Feed Wolfram Alpha a query and out pops . . . an answer.

MATCH THE QUERY TO THE ENGINE

Wolfram Alpha (www.wolframalpha.com) is geared towards a particular range of queries. You can type `dates of bondi kite festival` into Google and you'll not only turn up sites that provide the correct dates, you'll also find out that the festival's name — which you couldn't for the life of you remember — is Festival of the Winds. Type the same query into Wolfram Alpha and you'll get the result 'Wolfram Alpha isn't sure what to do with your input'.

Try Wolfram Alpha on `yellow + pink` or `male 185cm 70kg` or `e f# g# c` or `phase of moon when kevin rudd was born` and bingo — you'll strike a lode of highly enriched paydirt. Google, on the other hand, will respond to such searches with a deluge of unrelated links. Wolfram Alpha knows that mixing yellow and pink gives you an orange hue somewhere between the HTML colours 'goldenrod' and 'peru'. It can tell you that a man 170cm tall weighing 70kg could afford to put on around 8kg to be at his ideal body weight. You'll discover that the notes E, F#, G# and C are part of the G Raga Nata and Raga Sindhura Kafi scales, and also make up the second inversion of a G# augmented seventh chord. And you'll learn that Kevin Rudd was born under a waning crescent moon, although Wolfram Alpha fails to say whether this is auspicious. Try such queries for yourself and you'll see that Wolfram Alpha will provide these answers plus a raft of other details.

STRUCTURED DATA

Built around Wolfram Research's Mathematica program, Wolfram Alpha combines a store of data with a serious number-crunching, cross-tabulating inference engine. You interact with that data and the engine through a simple input box, using plain English or structured queries. Wolfram Alpha has been accumulating the data store for over 20 years. While traditional search engines trawl through the billions of gigabytes of data on the internet, Wolfram Alpha's data store is a piddling 10 terabytes — a mere 10,000 gigabytes. The real distinction, though, is that Alpha's measly data store is, in fact, a knowledge base. The data is structured, checked by humans and from named sources. If you've ever despaired at the quality of information provided by sites such as Yahoo! Answers or worried about the source of information in a Wikipedia entry, you'll appreciate that Wolfram Alpha provides an entirely different type of service.

FIRST, A CALCULATING ENGINE

With Mathematica for a mother and its self-billing as a 'computational knowledge engine', it should come as no surprise that Alpha is a wild kid with mathematical and scientific calculations. You can try it out with something simple: `cube root of 99273*1.7^3`. The answer is 78.7153, which Alpha will happily expand to many more decimal
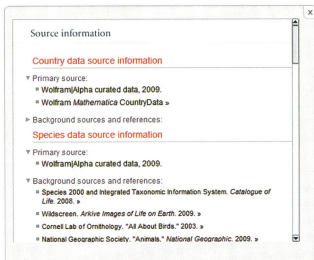
How does Wolfram Alpha know the answer? Click the Source link at the bottom of the result to see a list of data sources.

TRY WOLFRAM ALPHA ON THESE QUERIES

$250,000 mortgage 6.25% over 25 years
1 cup of orange juice and 1 slice of bread
2, 5, 9, 17, 29
4,500 words
7 largest countries
AUD
BP 150/82 age 35
caffeine in cup of coffee, cup of tea
circumference of earth / speed of sound
curlicue fractal
f_t_l_
ISS
mix #7fee27 and #4e69de
NAB, ANZ
oldest tree
pcuser.com.au
Prime Minister of Australia in 1932
running 12km at 11km/h male 50 years
Soundex placid
stopping distance 105km/h
The Dish
weather forecast Perth
what are tides?
where am I?

places of precision. Of course, you can feed the same thing to Google and its built-in calculator will give you the same result.

Or will it? Google actually gives you the result 227.487295. The discrepancy results from Alpha interpreting your input as cube root of (99273*1.7^3), while Google thinks you mean (cube root of 99273)*1.7^3. The moral is to mind your parentheses.

The Google calculator can keep up with Alpha for basic maths, trigonometry and a vast range of measurement conversions, but once you get into calculus, logic and set theory, geometry and a host of other advanced mathematical calculations, Google bites the dust as Alpha is just getting into its stride. Alpha thrives on queries such as **219 to base 9** and **derivative of sin(x-1)** . Or for some real fun, simply type in **Klein bottle** .

If you're not into heavy mathematical lifting, Alpha can still help you out with some everyday maths, such as the weight of 2 litres of water (handy when you're planning a long hike), or the likelihood of turning up three aces in a five-card poker hand. It can tell you the number of days between two dates (**now-27 years 2 months**), generate a calendar (**2024 AD**) and tell you a bit about the Earth in its distant past (**1.3 billion years ago**).

Alpha is just as at home with a huge range of scientific calculations and data. Everything from quantum physics to properties of elements, to electrical circuits. It displays diagrams, tables, formulas, spectra and all its results in a format you can copy to the clipboard with a click, or even download as a PDF document.

_ MORE THAN A CALCULATOR

Wolfram Alpha excels in the physical sciences, but it's equally at home in many other spheres. Stock prices, demographics, word puzzles, genealogy, Babylonian numerals, caloric intakes, and lifeforms from the triceratops to the Venus flytrap. If you're not sure what to ask it, simply type in a generic topic such as words, maps, mortality, transportation, music, eclipses and so on. Alpha will respond with examples of the types of questions you can ask.

Wolfram Alpha is also an excellent dictionary — far more useful than Google's

define:word syntax, which often directs you to advertising-ridden 'dictionary' sites. Type a word into Alpha and you'll be presented with its definition(s), pronunciation, synonyms (including a synonym network diagram), narrower terms, broader terms, origin and recommended hyphenation.

_ SMART & DUMB

There are plenty of things Alpha doesn't know and even when it does know the answers, it's sometimes very difficult to discover the correct syntax required to tease out the result you need. For example, Alpha knows the distance from Melbourne to London and it knows the equatorial circumference of the Earth, but just try to get it to tell you the difference between the two measurements. It's also skewed towards data from the US. With a little maturity,

Alpha should shed some of this syntactical boneheadedness and parochialism.

In the meantime, this savant will astound you as much as it frustrates you. Try some of the queries in the table opposite to get a sense of its capabilities. And if the idea of an answer engine appeals, take a look at a couple of Alpha alternatives. Start (http://start.csail.mit.edu) has been around for well over a decade as a research system, while True Knowledge (http://trueknowledge.com) is quietly preparing itself for a more public showing.

PRACTICAL, FLEXIBLE & EMBEDDABLE

Feed Wolfram Alpha a query such as **1 banana plus 1 cup ice cream + 1 tablespoon almonds** and it will display a mocked-up nutrition label showing you just how good that sundae is for you.

Exchange history for A$ 1 (Australian dollar) — Reverse rate

Last year / Last month / Last year / Last 5 years / Last 10 years

1-year minimum 48.07c (October 12, 2008 | 8 months ago)
1-year maximum 61.94c (June 5, 2008 | 12 months ago)

Units >

If the results aren't quite what you expect, Alpha is happy to oblige with drop-down lists and alternative options to give you another perspective.

Add Alpha to your Firefox search engine or as a desktop widget by visiting the Downloads page.

serving sizes
banana: 1 banana (118 g)
ice cream: 1 cup (214 g)
almonds: 1 tbsp (9 g)

total calories 540	fat calories 231	
		% daily value*
total fat 21 g		33%
saturated fat 10 g		50%
trans fat 130 mg		
cholesterol 60 mg		20%
sodium 173 mg		7%
total carbohydrates 82 g		27%
dietary fiber 7 g		28%
sugar 50 g		
protein 12 g		24%

vitamin A 17%		vitamin C 21%	
calcium 32%		iron 3%	
vitamin D 14%		vitamin E 15%	
thiamin 9%		riboflavin 35%	
niacin 7%		vitamin B6 27%	
vitamin B12 13%		folic acid 14%	
phosphorus 29%		magnesium 24%	
zinc 11%			

*percent daily values are based on a 2000 calorie diet

Windows Vista Desktop Gadget

► Download

Toolbars
Add to Internet Explorer
Add to Firefox 2
Add to Firefox 3

Search Engine Add-ons
Install Search Add-on

Online genealogy

Heather Garnsey of the Society of Australian Genealogists provides some tips to help get you started tracing your family history online.

Everywhere you turn these days it seems you'll hear someone tracing their family history. Just putting a simple search term into Google usually brings up sponsored hits from online genealogy companies and even on TV, we regularly see celebrities trace their family history back four or five generations in the space of an hour's viewing. How hard can it be, you ask? Well, let's start at the beginning and find out how you can start tracing your family history with the help of the internet.
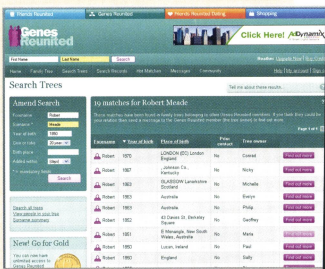
_BASICS FIRST

There are a few golden rules you can't ignore, whether you're going to do your research online or in a library or archive. The first is one that you'll hear time and time again: start with yourself and work backwards. Never try to link yourself in with some famous (or infamous) historical figure to see if they're related to you. It rarely works and you're likely to spend a fortune trying to prove a connection with them. You have two parents, four grandparents, eight great-grandparents and so on. Working back methodically generation by generation is the only way to succeed, so don't be tempted to jump the first few generations just because you think you know about them already.

Of course, there are many online temptations for the budding genealogist. Some of the most obvious are the commercial sites that pop up a 'Search your ancestors here' box as part of their online advertising campaign. Sites like Ancestry.com (**www.ancestry.com**) and its partners **www.ancestry.com.au** and **www.ancestry.co.uk** are good examples. They offer a search box in which you simply enter a name of interest and hey presto — they'll deliver a list of hits, mostly in the form of indexes to records they hold in their databases. To proceed further and to follow up on any of these hits you'll need to sign up for a subscription or purchase some 'pay to view' credits. This is a step you may want to take a little further

down the path, but it isn't where you should start. The value of these online companies becomes greater when you've established a basic knowledge about when and where your family lived.

Golden rule number two doesn't have to involve using the internet at all. Talk to other family members and gather together their knowledge of parents, grandparents and so on. Try to establish when and where your immediate forebears lived, where they married and where they were born. Ask if anyone has any old family documents like birth certificates, wills, school reports or photographs that might help to fill in the gaps. These are often referred to as 'home sources' (because that's where they're usually found) and there's good guidance on what you should look out for on Genealogy.com's Learning Center (**www.genealogy.com/genehelp.html**). Anything that helps to put

your family members into a specific location at a specific time is going to prove to be useful. You'd be surprised how often people fail to collect family history information from those around them, and then later spend years and lots of money trying to piece it all together from other sources.

Rule number three in genealogy is don't reinvent the wheel, so it's important to find out who might have already traced your family's history and who is currently working on the same family lines before you embark on the process yourself. Genes Reunited (**www.genesreunited.com**) is one of the largest online listings of active genealogists and boasts almost 10 million members worldwide. There's no charge to use its basic facilities, although you must register to do so. From the home page, click the 'Search Trees' tab and enter a minimum amount of information — for our search we

These are the search results for **Robert Meade b.c. 1850** in Genes Reunited.

Search results for the name **Harper** in the online library catalogue of the Society of Australian Genealogists.

Looking forward

Each month we'll explore web sites that will help you with your online family history research and give tips on the best sites to visit for both Australian and overseas sources.

looked for **Robert Meade b.c. 1850**. The results screen shows the date and place of birth of anyone of that name born around 1850, together with details of the person who has submitted the information to Genes Reunited (usually just their given name) and an automatic link so you can contact them.

The beauty of this site is that you don't have to reveal any identifying information about yourself and contact is made through the Genes Reunited site, not directly. However, don't just start writing to anyone who is researching a name you recognise. A good tip to remember is that once you find someone who looks like they're tracing the family you're interested in, try entering a name from another branch of that family; if the same person pops up tracing that line too, then you almost definitely have found a relative and contact is worthwhile.

Another part of the 'don't reinvent the wheel' process is to check what's already been published on your family lines. Try checking the catalogue of a specialist genealogical and historical collection, such as the Society of Australian Genealogists (**www.sag.org.au**) to see if they hold any books in their library on your family. Libraries Australia (**http://tinyurl.com/fqfzm**), which operates as part of the National Library of Australia web site, is another good way to check for published histories and biographies, as it combines into one catalogue more than 42 million items from libraries around Australia. These and other similar sites allow you to determine whether there has already been anything written on your family, and it gives you the chance to locate a copy of that book and hopefully contact the compiler.

BUILD THE FRAMEWORK

If you've understood those three golden rules, then you're ready to start your own research quest. Let's look at how you'd start tracing a family that's been in Australia for at least three to four generations.

First, you need to build the framework of the family tree by gathering together the relevant birth, death and marriage records.

The best way to do this in Australia is to visit the web sites of the various Registries of Births, Deaths and Marriages (BDMs). Every state and territory in Australia has its own separate system of registration, so you'll need some idea of the area in which the family might have lived. Using NSW as an example, you can visit the NSW Registry of BDMs at the **www.bdm.nsw.gov.au** and freely search its indexes of births that occurred in NSW up to 1908, marriages to 1958 and deaths to 1978. If you need to start your search in another state, follow the Links tab from the homepage — most states have free online indexes (Victoria charges a fee to view search results), but you'll find the cut-off dates for indexes will vary state by state. Alternatively, you can visit the gateway site **www.coraweb.com.au** and follow the links under 'Birth, Death and Marriage Records' to find the relevant state or territory.

Work backwards using these indexes and see how much information you can gather. If the surname is an unusual one it might be relatively quick to go back three to four generations. The results screen will, at a minimum, provide for surname, given name, year of registration and locality. Birth and death registrations record parents' names, and the name of the spouse is given for marriage entries.

Don't just rely on the indexes to construct your tree. Like most things, you need to be prepared to invest both time and money if you wish to have success, and skimping on documentation in family history will come back to bite you in the future. This is where sites like Genes Reunited can be so good, as you can locate people who've already done this work and who are prepared to share their results with you. The eastern states of Australia (Queensland, NSW and Victoria) have one of the best systems of registration in the world, and certificates for events from the 1850s onwards provide wonderful genealogical detail, so don't be tempted to skip this vital step. NSW is alone in also offering authorised transcription agents: Transcriptions.com.au (**www.transcriptions.com.au**), Joy Murrin Family History Services (**www.joymurrin.com.au**) and Turtle Consolidated Services (**http://home.iprimus.com.au/turtle/**). Each of these can supply copies of BDM certificate information at reduced rates.

Continue working backwards through the BDM records until you locate the death and/or marriage certificate of the earliest person in your family line for whom you don't have an Australian birth record. Their death and marriage certificates may give you clues that they were born overseas and an indication of when they arrived in Australia. Once you have those details, there's every chance you'll be hooked on family history, so the search to find out more can then begin in earnest.

For kids

Gail Lipscombe reviews the latest software,
web sites and tech toys for kids.

PC USER **BEST BUY**

90%

KAHOOTZ 3

AGES SEVEN TO 15 YEARS / **PRICE** $69.95 / **CONTACT** DATAWORKS
PHONE (03) 9764 8344 / **WEB** www.dataworks.com.au

Kids will have a ball with this software as they take on the role of an animated filmmaker. The program, published by the Australian Children's Television Foundation, lets them create cool 3D animations. The best thing is that they don't need to have any artistic skills — just a little imagination — all the hard work of creating the graphics and sounds has already been done. To create the graphics, Kahootz 3 provides over 1,000 3D objects including people, animals and buildings, which can be placed in almost 100 different worlds. The more adventurous can upload their own photo to add to their scenes. There are around 1,000 sounds and sound effects included, and kids can record their own voice to create a four-track soundtrack. The software can also be used to create 3D games. **PC User says:** Lets kids indulge their creative energies on a number of skill levels.

85%
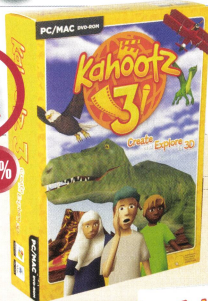
JUNIOR BRAIN TRAIN LOGIC GAMES

AGES SEVEN TO 11 YEARS / **PRICE** $19.95 / **CONTACT** QV SOFTWARE / **PHONE** (02) 9748 2555 / **WEB** www.qvsoftware.com.au

Brain training games are definitely all the rage with adults at the moment, but now the kids can get in on the act with this program. One of three titles in the Junior Brain Train series, Logic Games aims to challenge, test and train kids' brains. There are 12 games included here, each with three difficulty levels — kids start on the easiest levels and they get harder as the results improve. In each game, players get an amount of fluid allocated to them based on the number of right answers, then the fluid is emptied into bottles in the laboratory; the aim is to fill all the bottles. The puzzles in Logic Games would have quite a few adults scratching their heads, so they'll really put kids' ability to reason to the test. Good results are rewarded and bonus points can be earned. **PC User says:** An entertaining way to sharpen kids' logic reasoning skills.

LET'S GO THOMAS!

AGES FROM 18 MONTHS / **PRICE** $129.95 / **CONTACT** FUNTASTIC
PHONE 1800 244 543 / **WEB** www.funtastic.com.au

PC USER **BEST BUY**

95%

Thomas the Tank Engine fans will go crazy for this new toy because for the first time in toy form, he actually talks. And that's just the start of it. Instead of just a few set phrases, he has a repertoire of 60 of them, plus he can tell stories and sing songs. Thomas also has great interactive features. While switched on, he will speak to you when there's movement in front of him and his mouth works in a realistic way (thanks to the rubbery material his face is made from) and his eyes move expressively. He's not all talk and no action, either. Thomas can chug along by himself, plus he'll let you chase him or come to you when you call him. Thomas can travel easily on most floor surfaces and is powered by three C-sized batteries. **PC User says:** Very sophisticated features and a must-have for Thomas fans.

SFS KIDS

WEB www.sfskids.org

This site from the San Francisco Symphony is a brilliant resource for children to learn about music. They're taken through the different instruments that make up the orchestra, their families (strings, woodwind and so on) and where they sit in the orchestra. The Music Lab shows them the basics of sheet music — the different types of notes and symbols, and also tempo, rhythm, pitch, harmony, playing songs on a virtual keyboard and composing a song. There's a radio with six stations, each with music that demonstrates the different ways instruments are used to portray musical styles. The site is brightly coloured and the contents are engaging, and kids can move through the screens at their own pace. **PC User says:** A great way to engage kids with music in a fun learning environment.

85%

AFTER HOURS

COOL & NEW

HTC MAGIC

PRICE $850 / **CONTACT** HTC / **PHONE** 1300 769 669 / **WEB** www.htc.com/au

The HTC Magic is the second Android OS-based phone to hit Australian shores, but it couldn't be much more different to the earlier HTC Dream. Gone is the physical keyboard, replaced with a purely touchscreen keyboard solution, made possible by the fact that it's running the upgraded 1.5 Cupcake version of Google's Android operating system. The Magic and Dream hardware is otherwise virtually identical, with a 528MHz processor, 3.2in TFT screen and 3.2-megapixel camera. Depending on your carrier choice, you'll get either 288MB (Three) or 192MB

(Vodafone) of onboard memory. The Magic's also cursed with a single micro-USB connector, meaning you'll annoyingly need a custom plug to use headphones. For what it's worth, we tested the Three model of the Magic and were very impressed. Android remains as flexible as ever, with an expanding application Marketplace that now allows for paid applications. It's still got a long way to go to catch up with the iPhone in the Apps sphere, but the offering is still solid. Battery life was good, with a day's heavy usage well within reach in our tests. The Magic also benefits from the removal of a physical keyboard

simply because it feels more solid in the hand. It's unlikely, given the relative price parity with the iPhone — which the Magic very clearly targets — that Apple's got much to worry about in this space, but if you can't stand iTunes or other Windows Mobile/S60 Smartphone alternatives, the Magic is a very solid contender indeed.
— **Alex Kidman**
PC User says: Second time's the charm for Android.

PC USER BEST BUY

85%

RAZER MAMBA

PRICE $210 / **CONTACT** ALTECH COMPUTERS / **PHONE** (02) 8831 9999 / **WEB** www.razerzone.com

65%

For a second, let's just ignore that this wireless laser gaming mouse costs $210, and consider what it gets right. The Mamba isn't covered in buttons (there are five, including the scroll wheel, plus an extra two for sensitivity adjustment), nor is it particularly aggressively styled (a single blue LED adorns its scroll wheel, though its docking station is a tad more garish). What it does offer is excellent ergonomics, flexible

connectivity and sky-high laser sensitivity with an exceptionally high polling rate. In fact, excessive is probably a better description of the Mamba's maximum 5,600dpi sensitivity, but otherwise, its specs are spot on for serious gaming. That super-sensitive laser tracks on almost any surface (glass excepted), similar to Microsoft's much-hyped BlueTrack technology. Capable of being used wired or wirelessly, the Mamba's 1-millisecond latency

actually makes the latter a viable option for competitive gaming, and its weight, shape and finish are uniformly excellent for right-handers (though slightly less so for lefties), making everyday use a pleasure. Unfortunately, ignoring the Mamba's price is impossible: it's about double what we'd be willing to pay for a gaming mouse.
— **Dominik Krupinski**
PC User says: Fantastic gaming mouse? Check. Sensible price? Um . . .

LOGITECH G13 ADVANCED GAMEBOARD

PRICE $130 / **CONTACT** LOGITECH / **PHONE** 1800 025 544 / **WEB** www.logitech.com

The Logitech G13 is a fully customisable macro-based keyboard aimed squarely at anyone who plays PC games, and more specifically, massively multiplayer online titles, first-person shooters or real-time strategy games. Shaped similarly to Logitech's Comfort Wave full-sized keyboards, the G13 does conform nicely for left-handed use, but be warned that the buttons on the outer reaches of the pad can be a stretch for smaller hands — and there are a lot of them. It features 29 programmable buttons (25 standard plus a four-way directional joystick) and the device is switchable through three independent modes, allowing for a grand total of 87 programmable keys. Key assignment is done via the included software package, and there's a built-in 160 x 43-pixel LCD at the top of the board (similar to that on the G15 keyboard), which can show important in-game stats and messaging. Setting up the G13 is a snap, and once up and running, software add-ons are available to get direct feedbak for gaming-related apps through the LCD, such as Fraps, Ventrilo and Xfire. At $130, it is an admittedly expensive and niche gaming device. Considering the more fully featured (though superseded) Logitech G15 keyboard's asking price isn't that much more, it's difficult to recommend wholeheartedly.
— Troy Coleman
PC User says: A slick yet pricey peripheral.

75%
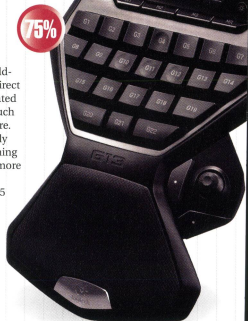
ACER TEMPO DX900

PRICE $750 / **CONTACT** ACER / **PHONE** 1800 235 567 / **WEB** www.acer.com.au

You can't sell a smartphone purely on the basis that it's a touchscreen model or that it's running Windows Mobile 6.1 anymore; those factors aren't all that unique. Even the custom skin that Acer puts over Windows Mobile in order to make it more bearable on the DX900 isn't a unique selling point — HTC has been doing that with multiple Windows Mobile Touch models for some time now. Where the DX900 tries to justify its asking price is in offering dual-SIM capability, similar to the DualSim Slider reviewed in *PC User* June, page 101. The DX900 ups the ante, however. The primary slot is 3G capable, with a secondary GSM-only SIM slot backing it up. This gives it some serious data capability with the inherent flexibility of being able to choose the cheapest (or best coverage) SIM in a particular moment or need. Sadly, also like the DualSim — and in fact, the Acer is considerably worse — the one weak spot is its battery life. In our tests, even with light usage, running both SIMs sapped the DX900's battery well before a working day was finished. Heavy usage only made matters worse, consigning it to use only by those who can keep it on a desk charger for most of the day.
— Alex Kidman
PC User says: Good idea, but it's clearly in need of a heavy-duty battery.

70%

BELKIN LAPTOP COOLING PAD

PRICE $40 / **CONTACT** BELKIN / **PHONE** 1800 235 546
WEB www.belkin.com/anz

Anyone who has worked with a performance-spec notebook on their lap for a decent stretch of time will know why 'laptop' isn't a very popular term among manufacturers anymore. Surely there's a lawsuit waiting to happen in the implication that keeping the equivalent of a George Foreman Grill on one's thighs is a good idea. Belkin's Laptop Cooling Pad seeks to remedy this in two ways: by separating notebook from lap while also cooling said machine with a built-in USB powered 65mm fan. For $40 that strikes us as an offer with potentially excellent mass market appeal. Success-wise, though, it's a bit hit and miss. We're not crazy about the cooling pad's looks — white plastic and soft curves are a little toilet-esque — but we're willing to admit that's subjective. Cooling efficacy is where we're more worried. It certainly keeps notebook heat away from sensitive laps, but then, any reasonably thick pad would do the same (Belkin's $18 CushTop, for instance). Dissipating heat away from the notebook, though? Not so great. We tested this cooling pad with a couple of notebooks, including one of Apple's old notoriously hot PowerBooks, and didn't see any real difference in idle/load temperatures.
— Dominik Krupinski
PC User says: Keeps laps cool, laptops less so.

70%
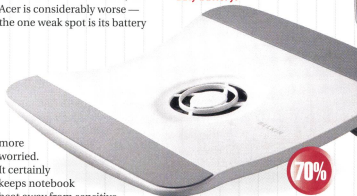
PANASONIC DMR-XW350

PRICE $1,050 / **CONTACT** PANASONIC / **PHONE** 13 26 00 / **WEB** www.panasonic.com.au

This PVR/DVD recorder combo features dual high-definition TV tuners and the ability to record up to 1080i HD content to its 250GB hard drive, as well as record or back up content to recordable DVDs (albeit in standard definition only). In our tests we saw excellent picture quality, an intuitive and responsive interface (with electronic program guide), as well as a range of recording options for saving disk space. There's also support for DivX playback, which can be done

from the hard drive, DVDs and CDs, SD cards and USB keys (but only those up to 128GB in FAT32 format, so you can forget about plugging in a large external hard drive). This goes some way to closing the gap between expensive name-brand PVRs like this and more

function-rich yet less copyright-wary PVRs such as DViCO's TViX series. The DMR-XW350 can also display YouTube and Picasa content via a network connection, which is a little less exciting (try searching for videos using a remote and you'll see what we mean).

Having said that, this model giveth and it taketh away feature-wise, because its DVD player is region-locked, which is pretty poor form for a $1,050 device.
— **Dominik Krupinski**
PC User says: DivX playback is a nice addition, but region-locking reduces its appeal.

SONY BRAVIA KDL22S5700S

PRICE $899 / **CONTACT** SONY / **PHONE** 1300 137 669 / **WEB** www.sony.com.au

The KDL22S5700S — which may as well be called the Bravia S as it's currently the only S series model on sale — is a 22in LCD TV running Sony's Bravia Engine 3 video processor. Tiny TVs have an uphill struggle to sell unless you give them a hook and in

the Bravia S's corner are two. Firstly, it's got an inbuilt clock. Yeah, don't everyone get excited all at once. You can use it as a bedroom TV, as it'll wake up on timed command and even remind you of program timings (though not record them), and the clock can be dimmed from the XMB (XrossMediaBar), an interface ripped straight from the PlayStation 3. It's also network capable for streaming photos and music, which we managed easily in our tests. Video file playback is more problematic,

as the range of supported video is quite slim — basically just MPEG-2 and AVCHD, with no Xvid/DivX support to be seen. As a screen that tops out at 720p, image quality wasn't superb, but was certainly passable if you're looking for a second TV for the kitchen, bedroom or kids.
— **Alex Kidman**
PC User says: A TV with a clock in it. Is this the future?

LOGITECH G35 SURROUND SOUND HEADSET

PRICE $185 / **CONTACT** LOGITECH / **PHONE** 1800 025 544 / **WEB** www.logitech.com

The G35 headset plugs into your PC via USB and requires a driver install to get working, meaning it's Windows only. Boasting 7.1 surround sound powered by Dolby technology, which is simulated, the surround capabilities sadly didn't quite nail directional voice accurately enough to be viable; sticking to the stereo setting resulted in pretty similar results. The unit itself is made from durable black

plastic, the headset feels robust and likely to withstand a beating, and the three interchangeable headband pieces can be switched out to suit most head sizes. The left ear houses the mic swing arm, which mutes itself when folded away, and provides excellent clarity in use. The left earpiece also serves as the control centre for the volume, mute, stereo/Dolby selector and three G keys. Programmable via

the bundled software, the G keys can be customised for on-the-fly control of iTunes, WMP, Ventrilo, PowerDVD, WinDVD and the gimmicky voice morphing. The G35 is a reasonably priced, comfortable and fully-featured headset that's likely to last more than a few seasons.
— **Troy Coleman**
PC User says: Great voice clarity and in-game sound at a reasonable price.

Hottest upcoming games

We take a look at the hottest games you'll be playing this year and next. **Will Porter** ventured into E3 for this report.

After a two-year hiatus, the E3 we know and love is back: pretty ladies, geeks in T-shirts, loudspeakers blaring out deafening noises and, most importantly, hundreds of the latest and greatest games vying for attention. For the PC it was a year somewhat shadowed by thunderous applause for the Xbox 360 and Project Natal, and a year peppered with dual console/PC announcements rather than exclusives.

Look below the big headlines, however, and some sterling work was at hand. As a developer, BioWare stole the show with the remarkable triumvirate of *Dragon Age: Origins*, *Mass Effect 2* and the PC-exclusive *Star Wars: The Old Republic*. Meanwhile, *Alan Wake* resurfaced with some remarkable gameplay to give structure and life to its formidable visuals. As for taking multiplayer gaming to new and fascinating places, both Splash Damage's *Brink* and Realtime Worlds' *APB* presented brave, original and technically dazzling action titles that were at once co-operative, dynamic, competitive and altogether joyous.

The first order of day one of E3 was a patient wait outside Valve's meeting room for the show's very first play-through of *Left 4 Dead 2* (L4D2). The storm over whether such a swiftly created sequel runs roughshod over Valve's promises of update support for the original game may have been brewing, but it undoubtedly remains a remarkable game in its own right.

Its southern charms, hugely advanced gore mechanics, improved AI director, Hazmat-suited deadheads and *Stand By Me*-style journey of discovery from Savannah to New Orleans make it a pure (if a little controversial) winner. As for the chainsaws and axes that can lop off legs and facial features alike . . . well, their praises just can't be sung highly enough. "Although the frying pan is my favourite," countered a Valve writer when this view was put across to him. "We want you to come across different items in the world and bash zombies over the head. Because that's really what you should do if a zombie apocalypse comes."

Heading out onto the show floor and into the massive crowds, we came across the shooter due to lock horns with L4D2 in the 2009 'best of' lineup: *Call of Duty 4: Modern*

Become the first Big Daddy ever created in *BioShock 2*.

Ark looks too beautiful to be in civil war, but it is and it's up to you to save it in *Brink*.
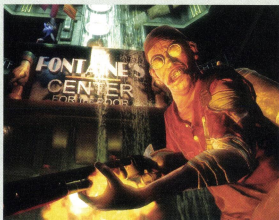
Warfare 2. Behind closed doors, as I sit with Infinity Ward's community manager Robert Bowling, we're exposed to what could well be *Call of Duty*'s most varied, suspenseful and intelligently paced level yet.

It begins with the ascent of an ice sheet and all manner of slips, falls and frantic hand-catching, and then moves into stealth combat against hunched sentries on a blizzard-ravaged Russian airstrip. However, later when saving comrade-in-arms Soap MacTavish from imminent peril through the medium of setting off a gigantic explosion in a fuel depot, everything goes south. Countless enemies pour onto the now crisp and clear runway amid exploding MIGs; a snowmobile chase through the forest ensues and jaws hit the floor at the level of destruction. Believe it when you hear it: *Modern Warfare 2* is going to be seriously good.

Yet if the show belonged to anyone, it belonged to BioWare. The *Dragon Age: Origins* presentation was perhaps a little too teen-chasing for some tastes (its emphasis was mainly on witch-boffing and the ensuing damsel jealousy), but it remains on target to be a strong return to BioWare's PC role-play roots — the spirit of *Baldur's Gate* is being heavily tapped. *Star Wars: The Old Republic*, meanwhile, continues to look for all the world like a genuine *World of Warcraft*

challenger, erupting onto the scene with a frankly remarkable cinematic piece showing the fall of Coruscant to the Sith.

"The neat thing about the trailer is that all the moves are actually from the game, and all of the ways the characters are set up," explained BioWare co-chief Dr Greg Zezchuk. "When they let loose with fire, that's one of the bounty hunter moves. All the flips, jumps and sword throws . . . all these things are actually in there."

I won't lie, I raised my eyebrows at this, but the game genuinely and successfully merges cinematic *Star Wars* combat with the traditional MMO hotkey setup. What's more, it introduces choice and decision making to the online RPG, and removes the somewhat cheaty quick save/load habits of those accustomed to offline role-play. With *Mass Effect 2* on Xbox 360 also on show at E3, BioWare must be mightily pleased with itself.

From here, a quick stroll across the floor led to the Ubisoft booth, where a busy hive of people could often be found slapping each others' backs heartily. The reason? Why, none other than the re-reinvention of *Splinter Cell Conviction*. Shown off two years ago, Sam Fisher's Bourne-esque Washington adventures were unconvincing to say the very least. Now, though, with a return to the shadows, a faster pace, *Heroes*-style verbal indicators plastered on walls and a gritty
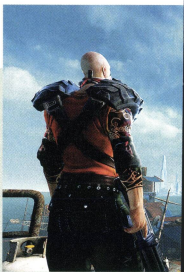
Ubisoft has shown conviction with Sam Fisher's latest outing.

Casino Royale-inspired public toilet encounter as its opening, Fisher is back and firing on all cylinders.

Assassin's Creed 2, on the other hand, looks much as it did before — only with far more benefit to anyone who's ever been on holiday to Venice. The recreation of St Mark's Square is nothing less than astonishing, although even back in the 15th century, it's fairly probable that there weren't quite as many hay carts sitting around in convenient locations.

However, it wasn't all smiles. Not every game stood out like a beacon of goodness amid the console life-training games and interchangeable pink/fluffy 'young excitable girl' DS franchises. Despite its strong dialogue and story, it was hard to see anything particularly new or relevant in Mafia II's combat, for example, while the general consensus as to BioShock 2's multiplayer contingent was a brief shrug of the shoulders. If ever there was a game that didn't cry out for deathmatch, however clever its 'civil war in Rapture' premise and neat way of giving you your own digs before heading out into the fray, it's BioShock.

It wasn't all frowns for 2K's wares, though. The lovely new visuals of Borderlands and XP-hungry co-op creature combat firmly marked it as a game to watch.

A great E3 then, even if the nature of the ongoing console wars means that drumming up the talents of the PC at a big gaming show increasingly isn't as natural a game publisher process as, say, emblazoning the Xbox 360 and PS3 with the logos of big franchises and associated go-faster stripes. Quietly and more demurely, the PC made its presence felt, showing that the next few years are going to be coloured every available shade of amazing.

Multiplayer revolution

Developer Realtime Worlds has called MMO APB its 'bastard child'.

Exciting things are happening online. First off, Splash Damage has come up with Brink, the cheery tale of Ark, a floating city of rich people that's become infested with plebs struggling to find a home after global warming drowned the Earth. The game sees Ark's security forces battle rebels in plush surroundings imbued with dialogue, two parallel and ongoing storylines, and long-faced yet highly customisable character models. You play missions cooperatively as one of four chosen classes, with a rival team working on the other side of the level that's out to thwart you. While playing, you essentially select various mini-missions that have been dynamically created by goings-on in the level. You may need to dart behind enemy lines to torture a fallen enemy into spilling his guts about your next objective, for example, or change class and blow a hole in the wall to provide a shortcut. What's more, on top of the crisp and stylised visuals, there's clever stuff going on with the movement of your character. The 'smart' key will look at your motion and decide what you want to do in different situations — run towards a security beam and it'll assume you want to slide under it; look up at a ledge and it'll assume you want to leap up there. Clever stuff.

APB, meanwhile, is a remarkable game of online cops and robbers. It has the most impressive character creation, tattoo, vehicle and music design tools to help you personalise your online presence (at E3, the demo managed to create a dead ringer for Barack Obama), but even then, the real meat comes in the 100-player server battles between Criminals and Enforcers. As a Criminal, if you were to steal a car, a non-player character could see you and call in the good guys, meaning you'd have a rival player in the garb of an Enforcer swing around the corner in a police car to deal with you. If you're a high-level criminal, the game may even have sent three newbie Enforcers over to deal with you, to balance it out. APB is a mesmerising game with a barrage of intelligent and exciting ideas — expect to hear great things from it.

Supercharge your Sims

Tamsin Oxford's tips and strategies will help you create the virtual life you've always wanted.

THE SIMS 3 PC

PRICE $99.95 / **WEB** www.sims3.com

EA's *The Sims* games have been around for a long time. *The Sims 3* sees much of the excessive micro-management cut away, leaving you to focus on higher-level, goal-oriented gaming. You still have to manage your Sims' abstract Moodlets, Traits and Lifetime Wishes, and foster their development through social interactions. This guide will help you create your own super-Sim in less than a day.

_A SIM IS BORN

You can manipulate the Free Will and Life Expectancy of your Sim by going to Options and pushing these two meters to the top. Free Will makes your Sim less finicky to manage and the longer life expectancy offers a lot more character customisation options as you progress. Either of these can be changed if you want to gain more character control or die and experience the Afterlife.

Needs now drop at a fairly realistic rate and when they hit the red zone, a Moodlet will warn you of impending Sim meltdown so you can fix the problem. The Moodlets merely tell you how your Sim is feeling and warn you when things aren't great. Give your Sim plenty of happy Moodlets and achievements and the benefits can last for hours.

Some Moodlets, such as New Friend and Having a Blast, will have points pouring into your Lifetime Happiness coffer for as long as they last. These get you Lifetime Rewards that let you customise the game.

_WORKING 9 TO 5

To get your Sim a job, go to Map View, select the company you want to work for and you're hired. Each career track offers you different choices, but there are usually a couple of set options, such as Take it Easy, Work Hard, Hang Out With Colleagues or Business as Usual.

Several factors influence how you get promoted: mood, skills, opportunities and social interactions. The best way to rise up the ranks is to go to work in an excellent mood. Select Work Hard and monitor both the green bar in the Work tab and your Fun Need Bar. If your Work Bar is full then Hang Out With Colleagues — you've done enough to get promoted.

You'll need to stay on top of your Wishes and fulfil them as often as you can. Structure these so you can complete several simultaneously while doing one task; for example, Fish Before 6am, Go Fishing and Catch A Salmon can all be achieved at once, and drop almost 1,000 points into your Lifetime Happiness coffer.

You won't need the full complement of Skills to move up in your career. In your Work tab you'll see smiley faces that tell you how well you're doing at meeting your career requirements. If these sit at Great or Good, you'll get promoted.

Opportunities present themselves during your career. Some will directly benefit your promotion and your relationship with your boss. Do them all and keep an eye on the deadlines. Finally, call your boss and colleagues every single day. Make them your friends and invite them to your parties, and you'll get promoted faster.

Grab a guitar, head into town and play for tips.
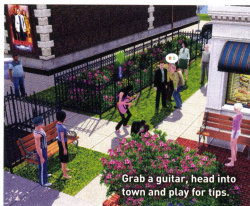
_SOCIAL DIVA

You can chat to Sims anywhere, from knocking on your neighbour's door to picking up hotties on the beach. To achieve a mass of friendships and romances in short order, grab yourself Charisma and a guitar. Owning a guitar is a major boost — play for tips in the park and you'll make friends, supplement your income and impress everyone with your skills. When you chat to other Sims use these options: Ask About Day, Ask About Career and Get To Know. You'll find out juicy bits of information you can use to your advantage.

It's also advisable to purchase Lifetime Rewards like Attractive, Never Boring and Long Distance Friends. Attractive is a good one to buy early on in the game because it has a marked affect on relationships; the others are more of a luxury that you can get once you've sorted out your career.

_MORE TIPS

✳ Get into the Afterlife by giving your Sim a happy life so when Death comes, he offers a choice. To die quickly and fulfilled, drop the Life Expectancy slider right down, fulfil all Wishes and wait patiently for the fun.
✳ Click on a Sim's picture to invite them round or give them a call, and click on the mailbox to pay your bills.
✳ Use the new speed 4 (fast-forward through current action) to motor through the boring bits while being able to relax and focus on higher-level stuff.

Manage your Moodlets, Wishes and Lifetime Happiness points to create the ultimate Sim

You can have your Sims throw a party.
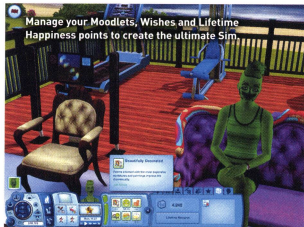
Chaos theory

The **PC User** team reviews the hottest games for PC and consoles.

PROTOTYPE X360

ALSO ON PC, PS3 / **PRICE** $109.95
WEB www.prototypegame.com

Prototype is a solid example that there's really nothing like a bit of ultraviolence to liven things up. A dark, atmospheric superhero title with a heavy dose of horror and gore, *Prototype* is a frantic third-person action game that brings a touch of old-school beat-'em up to an open-world sandbox city, in which you're free to roam and wreak havoc. Protagonist Alex Mercer has been infected with a virus that's slowly mutating him into a terrifying, shape-shifting monster, complete with giant black claws, veiny tentacles and the ability to absorb his enemies — blood, flesh, bones and all. He can run up the side of buildings, glide through the air and tear enemies and innocents limb from limb (this isn't one for the kids). The gameplay is about carnage and action, and it generally excels at this. However, the controls can feel messy at times, and it often seems like they're built more for speed and mayhem than precision.

The large and complex web of powers at your disposal, which are purchased and upgraded as you progress, also take a bit of effort to come to grips with. The story is played out through a standard mission structure, where you seek to find and destroy those responsible for your condition. But there's a host of other challenges and hidden objects throughout the city for you to find. Graphically, the game looks good, yet it doesn't quite have the level of detail or atmosphere of, say, *inFAMOUS* on the PS3. It's also difficult to really engage or sympathise with main character Alex Mercer — when your black-ops military enemies

85%

There's nothing like a bit of the old ultraviolence.

describe you as a sociopathic monster, it's hard to disagree. Still, there's something perversely enjoyable about running around wreaking damage with a blade for an arm, while flailing tendrils of partially-absorbed enemies trail along behind you. Worth picking up if you like a bit of carnage.
— Dan Gardiner
PC User says: *Excels at quick button-bashing carnage, but the controls can feel imprecise.*

FUEL PC

ALSO ON PS3, XBOX 360 / **PRICE** $89.95
WEB www.fuel-game.com

Fuel is set in a vast expanse of weather-induced, post-apocalypse North American wasteland to explore. I won't be alone in thinking it might have been better to have a fraction of the gameworld for a just a little more actual game. The main problem with *Fuel* is that it feels completely and utterly soulless. The open world will allow you to select different events, challenges and races to take part in, if you wish to travel the vast distances between them, but it's more likely you'll use the menu system to jump between them. This ends up making the Career mode feel very disjointed. There's no class of race to complete, no selection of cups or tournaments to take part in, just unconnected events with different vehicles. There are 19 zones, each with a selection of events and challenges. The ability to choose your own path between checkpoints in a race is the most entertaining part of the game. Tearing the controller to the right and leaping from a track in most racers will either destroy your car or set you back

The ability to choose your own path between checkpoints in a race is a neat idea.

58 mph **70%**

behind the pack, although in *Fuel*, it could be the move that gives you the advantage. Still, the racing AI isn't all that smart and if you find yourself in the lead, it's rarely a trial to stay there. A simple nitro-boost mechanic or weaponry or something to create a battle between the competitors would have been more than welcome, as would some sort of damage model. The open-world thing, online play included, is a thoroughly empty affair.

Aside from the irrelevant trucks that pop in now and then, this abandoned wasteland is just that. If we hadn't been spoiled with *DiRT* and *GRID* from the same publishers, we might not have been so damning of *Fuel*. Pretties and scale aside, there's nothing to recommend this shallow, dull racer.
— Dave James
PC User says: *Impressive scale and visuals, but the game itself is a hollow shell.*

GADGETS / GAMES

75%
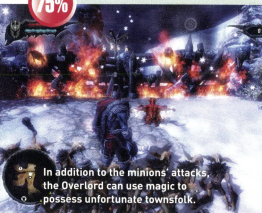
In addition to the minions' attacks, the Overlord can use magic to possess unfortunate townsfolk.

OVERLORD II PC

ALSO ON PS3, XBOX 360
PRICE $89.95
WEB www.overlordgame.com

Overlord II is the sequel to 2007's RTS-cum-adventure, which places you in the role of a mute demonic character and lets you oversee his ongoing sinister shenanigans. Despite some graphical improvements, the control system and central idea remain the same. It's up to you to fight off the endless hordes of bad guys; of course, essentially you're also a bad guy. As well as conquering the land, you have to keep your hellish base up and running, and make sure you've got enough minions. The control system is incredibly intuitive: left button to attack, right button to defend, both buttons to go on a mad rampage and destroy everything in sight. The hands-off approach takes a little getting used to, so if you prefer your hacking and slashing to be a bit more tactile, it may leave you cold. The minions are hilarious and captivating, causing untold chaos wherever they go. Unfortunately, even they can't cover up the game's flaws. The levels are neatly constructed around your save points, but figuring out what you have to do is a process of trial and error (mostly the latter). I could just about put up with the irregular save points and lack of a quicksave system, but enemies respawning upon loading made me fume. The AI is abysmal, with baddies standing there while your scamps kick seven shades of shinola out of them, or becoming horrendously aggressive and beating your mites into minion jam. There's a lot going for *Overlord II*: the mere concept is still enough to make it stand out and it has its charms. However, the novelty wears off pretty quickly and you get sick of it.
— Henry Winchester
PC User says: An innovative concept, but the sequel doesn't add anything new.

65%
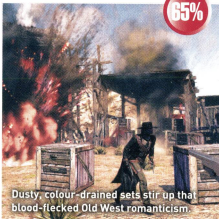
Dusty, colour-drained sets stir up that blood-flecked Old West romanticism.

CALL OF JUAREZ: BOUND IN BLOOD PC

ALSO ON PS3, XBOX 360 / **PRICE** $89.95
WEB www.callofjuarez.com

Call of Juarez: Bound in Blood (BIB) is a prequel, which is a good excuse to keep the fundamental elements the same. The events centre on the bandit Juarez, from the town of Juarez, seeking the lost treasure of Juarez. BIB is the bog-standard gunplay we're already weary of playing. There's a good variety of weapons for a Western, but you're never asked to do anything more inventive with them than walk into a sun-baked scene and click on heads that pop up from behind a crate. The original game shifted you from the shoes of stealthy Billy to violent Ray and back again as the levels progressed. This game has the same character archetypes, but you choose which brother to play at the start of each level. It's an ambitious idea, but you can't make use of your character's unique abilities. BIB tries plenty of tricks to evoke Spaghetti Westerns: slightly awkward slow-motion pistol fanning by waggling the mouse, twirling a lasso before tossing it, and quickdraw shootouts in place of boss fights. These are theoretically a good idea, but firing is an awkward struggle. The game is mostly conventional shootouts broken with linear set pieces. Later, there are brief ventures into a free-roaming shooter. It's a surprising and welcome change of format, but why not make this the game? The scenery is gorgeous, riding is fun, and approaching townships and bandit gangs from afar makes the game more strategic. BIB is an origin story only of interest to those truly invested in the first game's plot, with which it dovetails satisfyingly and well. But it's a hard game to recommend when there are much more interesting shooters out there, including its own predecessor.
— Tom Francis
PC User says: A mildly diverting shooter that fails to retain the interest of the original.

Move along folks, no salvation to see here.
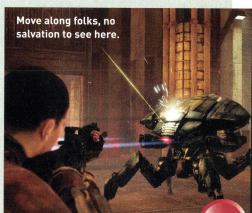
65%

TERMINATOR SALVATION X360

ALSO ON PC, PS3 / **PRICE** $99.95
WEB www.terminatorsalvationthegame.com

Terminator Salvation is not a great game and it's safe to say it has a few flaws. Still, we think it may have been treated a little too harshly in recent reviews — it's not the worst movie-to-video game adaptation we've played. At heart, it's a by-the-book cover-based third-person shooter, with a handful of weapons and enemies, some on-rails vehicle sections and a simple, straightforward plot. The story serves as something of a precursor to the film and features many of the same characters and major actors, the notable exception being Christian Bale, who reportedly refused to voice John Connor in the game. It's also very heavily scripted and very linear. The gameplay itself is reasonably solid, if simple. You and a group of squadmates must crawl through the ruins of post-apocalyptic LA, fighting off a variety of terminators and other machines intent on wiping out all human survivors. Winning battles is largely about sticking to cover and flanking enemies when possible. Graphically the game looks OK, with generally convincing environments, though the character faces can be a little rough and the animations jarring. Our biggest problem with *Salvation*, besides a woefully limited variety of enemies, is the extremely stingy checkpoint placement, which means you're constantly replaying 5-minute sections of the game every time you die. Moreover, we can't help but think it's been deliberately designed this way to cover up its length; even with all the repetition, most seasoned gamers should be able to finish it in five hours at most. The core gameplay isn't dire, but we'd be hesitant to recommend anything more than a rental.
— Dan Gardiner
PC User says: Not great, but worth renting for third-person shooter or *Terminator* fans.

75%
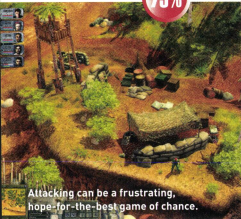
Attacking can be a frustrating, hope-for-the-best game of chance.

80%

Apparently, these are the guys you have to call.

Crappy gunplay and dodgy AI companions — the clue is in the name.

HIRED GUNS: THE JAGGED EDGE `PC`

PRICE US$29.99
WEB http://store.steampowered.com/app/33500

There's no getting away from it — *Hired Guns: The Jagged Edge* isn't a great game. However, there's definitely a level of enjoyment to be gleaned from this spiritual sequel to the *Jagged Alliance* series. *Jagged Alliance* 1 and 2 are classic turn-based squad shooters, following a team of mercenaries for hire though various missions, with lots and lots of guns. Changing publishers means the name had to be changed, but otherwise this 3D version is the same deal. It's a sort of turn-based *Far Cry 2* as you control, equip and hire the mercenaries with which to take down a vicious African dictator and restore peace to a mythical country through the generous spreading of violent death. Unfortunately, trying to figure out the meaning in the seemingly random syntax is a puzzle in itself. I thought it may have been an attempt at writing in broken English for effect, but it runs through the entire game. Its saving grace is the strategic action. You start off with a pool of money, which is quickly depleted by $3,000 thanks to the personality profile creation section, and with it you pay the wages of your group of mercs and kit them out. Then you take them on operations to different points around the map. The action is entertaining (bar the odd invisibly-barred doorway or inescapable trench), enabling you to plan your assaults with the various weapons and people at your disposal. Some missions can be completed without a shot being fired, with the right words, cash or lack of moral fibre. Choke down the bugs and have some patience with the impressive tactical skirmishes, and you'll find a rough diamond of a turn-based shooter.
— Dave James
PC User says: Equal parts frustrating and rewarding.

DAMNATION `PC`

ALSO ON PS3, XBOX 360
PRICE $79.95
WEB www.damnationthegame.com

45%

Welcome to the Wild West. It's alternative Civil War history, with steampunky robo rangers, wacky vehicles, weird weaponry, ballsy women and the worst story and voice acting this side of, well, *Wild Wild West*. Much of the hype has come from the idea of taking the shooter out of the corridor, but it's a vertical affair here, with your third-person avatar, Captain Rourke, able to leap, climb and defy gravity like no other. Except Lara Croft and her legion of clones. Sometimes just knowing where you're heading can be tricky, but your AI sidekicks often show the way if you watch closely. And what examples of AI loveliness they are. Need help in one of the incredibly unsatisfying gunfights? Look no further for someone to soak up some bullets than one of your poorly scripted buddies. They won't make the effort to shoot back, but they're well versed in taking bullets. The story is lame. The running, diving and climbing sections can be entertaining for a while, but as soon as gunplay is added, all sympathy goes out the window. Sadly, while there is cover strewn throughout the levels, there's no actual cover mechanic — something that's expected in third-person shooters — so you end up standing in plain sight. It might not be so bad if the combat was more visceral, but even the toughest weapons feel like pea-shooters. Enemies hardly react to bullet wounds and the sound effects are wimpy. *Damnation* falls somewhere in that purgatory between *Kane & Lynch*-style shooter and *Tomb Raider*-esque explore-'em-up, doing justice to neither.
— Dave James
PC User says: A weak shooter that even the sticky tape of co-op action can't salve.

GHOSTBUSTERS THE VIDEO GAME `PS3`

PRICE $109.95
WEB www.ghostbustersgame.com

It's hard to deny the goofball charm and cheesy humour of the *Ghostbusters* films (even the lacklustre second one), so we held some hope that this game, penned by original scribes Dan Aykroyd and Harold Ramis, would live up the originals. It's therefore a big relief to say that it delivers on most fronts, bringing back much of the original cast, using the same great music and nailing the cheesy, warm-hearted humour and dialogue. While there aren't that many truly laugh-out-loud moments, the plot and characters act to form. Set in 1991, you play a new recruit to supplement the four-man ghostbusting team, and together you fight a new supernatural threat to New York. Bustin' ghosts is obviously the heart of the game and the designers have remained largely faithful here. Wrangling ghosts is done from a third-person perspective and operates exactly how you'd expect: wear them down with the beam from your proton pack and then rope them into a trap. There are a few new weapons, which help add variety and bring a few twists to the experience, including solving puzzles or removing obstacles. The game is divided into a series of longish missions, though the transition from one to the next is fairly seamless, thanks to a solid storyline. While the graphics aren't spectacular, they're solid enough to create an atmosphere and get the job done. The voice acting is first-rate, too. Due to a controversial publishing deal between Sony and Atari, *Ghostbusters* is currently a PlayStation exclusive, though it should arrive on other platforms (including PC and Xbox 360) later this year.
— Dan Gardiner
PC User says: An enjoyable and faithful title that maintains the spirit of the films.

PC SPECIFICATIONS / REVIEW HIGHLIGHTS

Your perfect PC

Darren Yates selects the best-value PC specifications for your needs.

After giving Perfect PC the month off last issue, we've come back to find that much of the PC component landscape has shifted down a gear. Prices for components have dropped significantly, with hard drives and CPUs seeing noticeable movement. While hard drives have just restarted their usual downward tracking, the change in CPU prices is more dramatic.

Lower-end CPUs including the Pentium Dual-Core E5000 and Core 2 Duo E7000 series have dropped as much as 20% in value in the last couple of months. That's thanks to AMD's new flyer Phenom II X2 550 processor as much as the upcoming Core i3 and Core i5 chip range from the US chip giant. Although we're yet to see just how Core i5 will play out in the performance stakes, current CPU technology prices have never been better, and that's particularly shown up in PerfectPC's take on the $1,200 desktop PC.

_VALUE FOR MONEY

Our PerfectPC software dynamically builds a range of systems between $600 and $3,000 in value, based on our exclusive system-building algorithm. This month we've let it pull together the bits to make a pretty decent set of systems at the $1,200 mark. For around $1,200, you can put together a 2.8GHz Core 2 Duo E7400 system with a 1,500GB hard drive, 22in widescreen LCD monitor and ATI Radeon HD 4870 graphics card.

If you're more into video editing, drop the graphics card right back to a budget ATI Radeon HD 4350 and you can add in a second 1,500GB hard drive. That will give you 3,000GB of storage in a $1,200 PC!

If you're more after an all-rounder/do-everything system, you can go for a GeForce 9800 GT graphics card and two 1,000GB hard drives, and keep that 2.8GHz Intel Core 2 Duo E7400 chip. (The other bonus with this CPU is its excellent overclocking potential.)

If you want to edit video and use an AMD processor, you can get a triple-core Phenom

On the cover DVD

You'll find a copy of PerfectPC on this month's cover disc. While the software has been extensively tested, no warranty is implied or given — use at your own risk. PerfectPC is copyrighted software and not to be distributed in any form without written permission from the author.

$1,200 currently buys a very capable system, no matter what your needs.

II X3 710 processor and combine it with three 1,000GB hard drives, and similar specs to the Intel version for right on $1,200.

Having a budget of $1,200 might seem unusual (normally we look at $1,000 or

$1,500), but today, $1,200 buys what $1,500 bought us six months ago. Spending that extra $200 now will give you a little more room to breathe than the $1,000 price point doesn't really offer.

PC USER'S RECOMMENDED PC SPECIFICATIONS

	Gaming PC under $1,200	All-rounder PC under $1,200	Video editing PC under $1,200	
Platform	Intel	Intel	Intel	AMD
Processor	2.8GHz Intel Core 2 Duo E7400	2.8GHz Intel Core 2 Duo E7400	2.8GHz Intel Core 2 Duo E7400	2.6GHz AMD Phenom II X3 710
Motherboard	Intel P43 Express (such as ASUS P5QL-SE)	Intel P45 Express (such as MSI P45 Neo3)	Intel P43 Express (such as ASUS P5QL Pro)	AMD 780G (such as ASUS M4A78-EM)
Memory	3GB DDR2-800	2GB DDR2-800	2GB DDR2-800	2GB DDR2-800
Graphics card	ATI Radeon HD 4870	Nvidia GeForce 9800 GT	ATI Radeon HD 4350	ATI Radeon HD 4350
Hard drive(s)	1,500GB Samsung HD154UI SATA II	2 x 1,000GB Samsung HD103UI SATA II (2,000GB)	2 x 1,500GB Samsung HD154UI SATA II (3,000GB)	3 x 1,000GB Samsung HD103UI SATA II (3,000GB)
Optical drive, monitor, operating system and extras	ASUS DRW-22B1LT DVD burner, 21.5in widescreen LCD (such as BenQ G2220HD), Windows Vista Home Basic SP1, 500W case, generic keyboard, mouse			
Estimated price (including GST)	$1,199	$1,201	$1,194	$1,202
Alternatives/upgrades	A digital TV tuner card for media centre applications, a second DVD burner for disc copying, multichannel speaker system, consider using RAID on the hard drives.			

TECH TERMS: Chipset. A pair of chips on the motherboard (main circuit board inside the PC) that control many key functions, including which processors can be installed. **SLI** or **CrossFire.** Support for two graphics cards to run together for improved 3D gaming performance. SLI is for Nvidia-based boards, CrossFire is for AMD cards. **RAID.** Refers to a number of ways of using two or more hard disks together. RAID 0 pools disk space to improve performance. RAID 1 mirrors two disks to safeguard data. RAID 5 is less wasteful than RAID 1, losing only one drive's capacity for data redundancy.

HOME ENTERTAINMENT

Product	Review issue	Key specs	PC User says	Value rating
Sennheiser HD 228 $140 www.sennheiser.com.au	July 2009	Headphones	"Nice-sounding headphones that are small enough to be portable."	90%
Ultimate Ears MetroFi 150 $80 www.ultimatears.com	July 2009	In-ear headphones	"Excellent audio quality and good comfort."	90%
SiliconDust HDHomeRun $299 www.hdhomerun.com	June 2009	Network media player with twin HD TV tuners, BDA drivers and DVR software	"It efficiently allows multiple users to access the same TV tuner over a network."	85%
Western Digital WD TV $230 www.wdc.com	March 2009	Media player with composite and HDMI outputs, analogue and optical audio out	"A fantastic-value media player."	90%
Popcorn Hour A-110 $400 www.popcornhour.com	March 2009	Media player with HDMI, component and S-Video outputs, composite and optical audio out	"A very flexible network media player."	85%
Epson EH-TW3000 $2,999 www.epson.com.au	March 2009	1080p 3LCD projector	"One of the best budget 1080p projectors currently available."	85%
Logitech Pure-Fi Dream $275 www.logitech.com.au	January 2009	iPod audio system with iPod dock and clock radio	"A great little iPod stereo for the bedroom."	85%

MOBILE PHONES

Product	Review issue	Key specs	PC User says	Value rating
Nokia 5800 XpressMusic $850 www.nokia.com.au	July 2009	Touchscreen multimedia phone	"A generous music offering and good touchscreen make this a winner."	95%
Nokia 5220 XpressMusic $225 www.nokia.com.au	November 2008	Budget multimedia phone	"For the price, this is one of the most desirable music mobiles."	90%
Motorola Rokr E8 $400 www.motorola.com.au	November 2008	Budget multimedia phone	"If you don't need 3G or greater than a 2MP camera, rock on."	90%
Apple iPhone $800 www.apple.com.au	November 2008	High-end phone	"Not without its flaws as a phone, but unparalleled as an iPod."	90%
BlackBerry Bold $850 www.blackberry.com.au	November 2008	High-end phone	"A superior iPhone alternative for the serious mobile professional."	90%

SOFTWARE

Product	Review issue	Key specs	PC User says	Value rating
Symantec Norton 360 3.0 $129.99 p/a www.symantec.com.au	August 2009	Internet security suite	"Just about the best protection money can buy."	95%
Trend Micro PC-cillin Internet Security Pro 2009 $129.95 p/a www.trendmicro.com.au	August 2009	Internet security suite	"Has heaps of features, but remains accessible and easy to use."	95%
BitDefender Total Security 2009 $87.40 p/a www.netfreighters.com.au	August 2009	Internet security suite	"Outstanding value, with heaps of features at a reasonable price."	90%
G Data InternetSecurity 2010 US$29.95 p/a www.gdata-software.com	August 2009	Internet security suite	"Very effective at removing viruses and easy to use as well."	90%
McAfee Total Protection 2009 $129.95 p/a www.mcafee.com/au	August 2009	Internet security suite	"More comprehensive than just about any other product available."	90%
Kore Player Free (online registration required) www.native-instruments.com	July 2009	Virtual instrument software	"A great way to start using virtual instruments."	95%
Audacity Free http://audacity.sourceforge.net	July 2009	WAV editor	"The best totally free WAV editor available."	90%
GoldWave 5.25 US$49 www.goldwave.com	July 2009	WAV editor	"The best shareware WAV editor around."	90%
Roxio Toast 10 Titanium Pro Standard, $199.95; Pro, $269.95 www.roxio.com.au	July 2009	CD/DVD burning software for Mac	"The best choice for serious disc creation on a Mac."	90%
Corel Painter 11 $799 www.corel.com.au	July 2009	Digital imaging tool	"Remains the best digital artist's tool for the PC or Mac."	85%
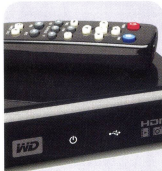
Western Digital WD TV
$230 / www.wdc.com

New to the media player market, Western Digital has done well on its debut. The WD TV is designed for use with a USB hard drive. The unit scans and indexes all the compatible media files it finds and plays almost anything, including HD video.

rating 90%

'Winner'
- PC User Best Buy, June 2009

PC USER BEST BUY

Dell 2209WA

$320 / DELL
1800 812 393
www.dell.com.au

This 22in LCD monitor features exceptionally good viewing angles all round, as well as a height-adjustable stand, swivel base and portrait mode. It's a 16:10 aspect ratio unit with a resolution of 1,680 x 1,050 pixels. It's also one of the best for image quality.

rating **90%**

Panasonic Viera TH-50PZ80A

$2,699 / PANASONIC
13 26 00
www.panasonic.com.au

This 50in plasma television is one of the few left on the market. It's a full 1080p panel with a 100Hz refresh rate. There's an SDHC-compatible card slot for viewing JPEG images, along with HDMI, VGA, component, S-Video and composite inputs.

rating **85%**

LCD MONITORS

Product	Review issue	Key specs	PC User says	Value rating
Dell 2209WA $320 www.dell.com.au	July 2009	22in widescreen LCD monitor	"Exceptional colour quality and loads of extras."	90%
BenQ G2400WD $340 www.benq.com.au	July 2009	24in widescreen LCD monitor	"Arguably the best bang-for-buck 24in widescreen LCD monitor around."	85%
Dell 2408WFP $999 www.dell.com.au	June 2008	24in LCD monitor	"It's pricey, but the best things in life often are."	95%
LG W2242T $370 www.lge.com.au	June 2008	22in widescreen LCD monitor	"Not loaded with features, but offers reasonable image quality."	80%
Philips 220CW $399 www.philips.com.au	June 2008	22in widescreen LCD monitor	"A reasonable monitor, but expensive considering the lack of extras."	80%
ViewSonic VX2255WMH $390 www.viewsonic.com.au	June 2008	22in widescreen LCD monitor	"Getting long in the tooth, but delivers an excellent stand."	80%

DIGITAL CAMERAS

Product	Review issue	Key specs	PC User says	Value rating
Nikon Coolpix L18 $180 www.nikon.com.au	November 2008	8-megapixel camera with 3x optical zoom	"The best under $200."	90%
Canon Digital IXUS 80 IS $240 www.canon.com.au	November 2008	8-megapixel camera with 3x optical zoom	"An excellent camera with image stabiliser for under $300."	90%
Kodak EasyShare V1073 $200 www.kodak.com.au	November 2008	8-megapixel camera with 3x optical zoom	"720p video at 30fps with a $200 camera makes us happy."	85%

BIG-SCREEN TVs/PROJECTORS

Product	Review issue	Key specs	PC User says	Value rating
Epson EH-TW3000 $2,999 www.epson.com.au	August 2009	1080p LCD projector	"One of the best 1080p projectors under $3,000."	85%
Panasonic PT-AX200E $2,099 www.panasonic.com.au	August 2009	720p LCD projector	"This is the best-value home theatre projector in the roundup."	85%
Panasonic Viera TH-50PZ80A $2,699 www.panasonic.com.au	August 2009	50in plasma 1080p TV	"A good 50in plasma TV at a decent price."	85%
BenQ W500 $1,899 www.benq.com.au	August 2008	720p LCD projector	"A good home theatre projector at a good price."	90%
Dell M209X $1,699 www.dell.com.au	August 2008	1080p DLP projector	"The best DLP projector of the roundup."	90%
Sony VPLVW40 $4,699 www.sony.com.au	August 2008	1080p SXRD projector	"The best home theatre projector we've seen, but lamps are expensive."	90%
BenQ W5000 $3,999 www.benq.com.au	August 2008	1080p DLP projector	"Not as good as the Sony, but better value over the long term."	85%
Epson EMP-TW1000 $3,499 www.epson.com.au	August 2008	1080p LCD projector	"Not outstanding, but great value."	85%
Panasonic Viera TH-42PZ700A $2,600 www.panasonic.com.au	August 2008	42in 1080p plasma TV	"The colour accuracy and image quality are well worth seeing."	85%
Panasonic Viera TH-50PZ700A $3,600 www.panasonic.com.au	August 2008	50in 1080p plasma TV	"Thirsty for power, but delivers an excellent all-round image."	85%
Sony Bravia KDL46XBR $4,000 www.sony.com.au	August 2008	46in 1080p LCD TV	"A bit pricey, but definitely the best Sony LCD TV we've seen so far."	85%
Sony Bravia VPLAW15 $2,100 www.sony.com.au	August 2008	720p LCD projector	"The best of the 720p projectors overall, but not $200 better than the BenQ."	85%

PC COMPONENTS

Product	Review issue	Key specs	PC User says	Value rating
AMD Phenom II X2 550 Black Edition $160 www.amd.com	August 2009	3.1GHz AMD dual-core processor	"This dual-core chip is potentially great for building budget gaming PCs."	95%
Antec P183 $260 www.antec.com	August 2009	Tower PC case	"Excellent acoustic dampening and slight tweaks make it a winner."	85%
Sapphire HD 4770 $170 www.sapphiretech.com	July 2009	ATI Radeon HD 4770, 512MB	"Any of these cards are a fantastic buy, but this offers the best value."	95%
Gigabyte GV-R477D5-512H-B $170 www.gigabyte.com.au	July 2009	ATI Radeon HD 4770, 512MB	"Offers similar value to the Sapphire if you're not interested in CrossFire."	90%
Gigabyte GA-EX58-UD3R $350 www.gigabyte.com.au	June 2009	Intel motherboard over $200	"Supports both CrossFire and SLI, is highly overclockable and loaded with features."	85%
ASUS P5Q-EM $220 www.asus.com.au	February 2009	Intel motherboard over $200	"A small board loaded with features and value."	90%
Cooler Master V8 $89 www.coolermaster.com	February 2009	All-purpose heatsink	"The best all-round cooler in the roundup."	90%

PRINTERS & MFCs

Product	Review issue	Key specs	PC User says	Value rating
Lexmark X5650 $160 www.lexmark.com.au	June 2009	MFC with printing, scanning and fax capabilities	"This one is loaded with features and isn't too expensive to run."	85%
Lexmark X7675 $260 www.lexmark.com.au	June 2009	MFC with printing, scanning and fax capabilities	"With an ADF, duplex printing and Wi-Fi networking, there's not much it can't do."	85%

GAMES

Product	Review issue	Key specs	PC User says	Value rating
inFAMOUS $109.95 www.infamousthegame.com	August 2009	Action game for PS3	"A fast-paced, well-balanced action title that's a blast to play."	90%
The Sims 3 $99.95 www.sims3.com	August 2009	Simulation game for PC and Mac	"May suck in harder gamers with its sharp wit and originality."	90%
Battlestations: Pacific $89.95 www.battlestations.net	August 2009	Strategy game for PC and Xbox 360	"An almost perfect war game."	85%
Fallout 3: Broken Steel 800 MS points http://fallout.bethsoft.com	August 2009	Role-playing game for PC and Xbox 360	"Worth every one of your pennies for a bit more Fallout 3."	85%
The Path US$9.99 download www.tale-of-tales.com/thepath	July 2009	Horror game for PC and Mac	"A beautifully dark experience, full of necessary evil."	90%
Grand Theft Auto: Chinatown Wars $69.95 www.rockstargames.com	June 2009	Action game for Nintendo DS	"A fun, wildly varied and innovative addition to the GTA line."	90%
World in Conflict: Soviet Assault $49.95 (Complete Edition) www.worldinconflict.com	June 2009	Strategy game for PC	"The Complete Edition is a great way to introduce newbies to this RTS masterpiece."	90%
Street Fighter IV $119.95 www.streetfighter.com	May 2009	Arcade fighter game for Xbox 360	"A big welcome back for the Street Fighter crowd and an excellent arcade fighter."	95%
Empire: Total War $99.95 www.totalwar.com/empire/	May 2009	Strategy game for PC	"Covers all the real-time and turn-based strategy bases."	90%
Zoombinis Maths Learning System $29.95 www.mindscape.com.au	April 2009	Educational maths game for children over eight years	"Our favourite kids maths software ever — and not a number in sight."	95%
Knowledge Adventure: Books by You! $29.95 www.dataworks.com.au	April 2009	Educational creative writing software for children over eight years	"This is the best creative writing package we've seen."	90%
Leapfrog Tag Reading System $99.95 www.leapfrog.com.au	April 2009	Educational reading software for children from four to eight years	"A great way to develop reading skills without the help of an adult."	90%
Killzone 2 $109.95 www.killzone.com	April 2009	First-person shooter for PS3	"The killer FPS PS3 owners have been waiting for."	90%
World of Goo US$20 download www.worldofgoo.com	March 2009	Puzzle game for PC	"Indie gaming's finest hour and the best puzzle game since Lemmings."	95%

Sapphire HD 4770

$170 / ACHIEVA TECHNOLOGY
(02) 9742 3288
www.sapphiretech.com

This Radeon HD 4770 is the best-performing budget card we've ever seen. It punches well above its weight, with very good results in all our gaming benchmarks. In terms of extras, it comes with CyberLink PowerDVD and DVD Suite, as well as a CrossFireX connector.

rating 95%

Street Fighter IV

$119.95 / PC, PS3, XBOX 360
www.streetfighter.com

The latest Street Fighter game features well-known characters from early games in the Street Fighter series and combines this with an enjoyable combat system that even novices will be able to grasp. The animation has been brought up to date, so all the characters look great. It's engaging, frantic, fast and fun, and we think it's the first can't-miss game of 2009.

rating 95%

PC SPECIFICATIONS / REVIEW HIGHLIGHTS

Buffalo MiniStation PRO HDS-PH1600U2 160GB

$179 / UNIDEN / 1300 366 895
www.buffalo-asiam.com

This 2.5in external drive is USB powered and is small and light. Its main selling point is its inbuilt encryption hardware, which locks the drive automatically once it's unplugged from a PC. This took a bit of a toll on its file transfer performance. The included backup software is excellent and easy to use.

rating **90%**

Billion BiPAC 7402GXL

$260 / PC RANGE
(08) 8186 1800
www.billion.com.au

This ADSL router also features support for 3G broadband. Plugging a 3G dongle into the USB port on the back got us up and running very quickly. There are also four Fast Ethernet ports and a decent wireless range. About the only thing it lacks is 802.11n.

rating **90%**

NETWORKING

Product	Review issue	Key specs	PC User says	Value rating
Belkin Powerline AV Starter Kit $205 www.belkin.com/au	August 2009	200Mbps Ethernet over Power device	"Reliable data throughput with great plug design."	85%
Billion BiPAC 7402GXL $260 www.billion.com.au	May 2009	Dual ADSL/3G router	"A neat dual ADSL/3G router that works well overall."	90%
Linksys WRT610N $280 www.linksys.com.au	January 2009	802.11n wireless router	"It's not cheap, but it's smart and very fast to boot."	85%
DViCO TViX M-6500A $530 www.tvix.co.kr/eng	January 2009	Network streaming device	"A media streamer that can do it all."	85%
Billion BiPAC 7402NX $295 www.billion.com.au	October 2008	802.11n ADSL 2+ router	"Very fast and capable."	90%
QNAP TS-109 II $315 www.qnap.com	October 2008	Single-drive network storage device	"No redundancy here, but you get lots of features for the price."	90%

STORAGE

Product	Review issue	Key specs	PC User says	Value rating
QNAP TS-439 Pro Turbo NAS $1,350 www.qnap.com	June 2009	Four-bay network-attached storage	"Everything you could ask for in a four-port NAS."	95%
Pioneer DVR-216BK $35 www.pioneer.com.au	May 2009	SATA 20x DVD burner	"The best overspeed burning drive we've seen, and what a price!"	95%
APACER Handy Steno AH421 16GB $85 www.apacer.com	May 2009	USB flash drive	"A good design and excellent performance at a nice price."	90%
Buffalo DriveStation Combo 4 HD-NS500D 500GB $249 www.buffalo-asia.com	May 2009	External eSATA hard drive	"Great performance, thanks to eSATA and FireWire 800, as well as excellent software."	90%
LaCie Rugged Hard Disk 500GB $325 www.lacie.com.au	May 2009	Rugged external hard drive	"Fast, flexible, durable and reliable, but ugly and a tad expensive."	90%
Samsung SpinPoint F1 1TB $175 www.samsung.com/au	May 2009	Mid-range internal hard drive	"A great-value offering with solid performance and good thermals."	90%

BROADBAND SERVICES

Product	Review issue	Key specs	PC User says	Value rating
netXP Value5 $29.90/month www.netxp.com.au	April 2009	Unbundled, maximum speed 256Kbps download, data limit 5GB	"netXP took the line honours last year and it's a return for the low-budget plan this year."	90%
iSage Snowstorm 256 $29.95/month www.isage.net.au	April 2009	Bundled, maximum speed 256Kbps download, data limit 15GB peak/5GB off-peak	"This one has a nice, short contract term (six months), and a respectable 20GB allowance."	90%
iSage Blizzard 512 From $39.95/month www.isage.net.au	April 2009	Bundled or unbundled, maximum speed 512Kbps download, data limit 25GB peak/10GB off-peak	"iSage took out the awards for best-value bundled and unbundled with the same great plan."	90%
Locall Australis 30/10 From $54.95/month www.australis.net	April 2009	Bundled or unbundled, maximum speed 1,500Kbps download, data limit 30GB peak/10GB off-peak	"The plans under $60 a month were dominated by Locall Australis."	90%
Internode Home-Extreme-Pro $89.95/month www.internode.on.net	April 2009	Unbundled, maximum speed 24,576Kbps download, data limit 55GB	"This plan offers a good mix of data and speed."	85%
Netspace ADSL2+ 160GB $79.95/month www.netspace.net.au	April 2009	Bundled, maximum speed 24,576Kbps download, data limit 40GB peak/120GB off-peak	"Netspace sits at the top of the nationally available, non-upload-counting pack."	95%
iiNet Home 7 $129.95/month www.iinet.net.au	April 2009	Maximum speed 24,576Kbps download, data limit 40GB peak/60GB off-peak	"This one beat the rest because it offers longer off-peak times and a shorter contract period."	85%
Exetel NAK2B $55/month www.exetel.com.au	April 2009	Naked ADSL plan, maximum speed 24,576Kbps download, data limit 54GB peak/12GB off-peak	"Exetel managed to pull out all the stops with this one."	85%
PennyTel Free Access Untimed $9/month www.pennytel.com	April 2009	8c untimed local calls, international calls from 8c untimed	"Dirt cheap calls for excellent overall value."	90%
PennyTel Freedom $5/month www.pennytel.com	April 2009	8c untimed local calls, international calls to 8c untimed, 80 free calls per month	"Combines cheap call rates with 80 free calls per month to set destinations."	90%
SkypeOut Unlimited World Monthly €8.95 www.skype.com	April 2009	10,000 free minutes per month	"The value of this plan is hard to beat."	85%

PCs

Product	Review issue	Key specs	PC User says	Value rating
PC eXpress Invader 507B2 $1,999 www.pc-express.com.au	August 2009	3.33GHz Intel Core 2 Duo E8600 (overclocked to 4GHz), 2 x 1,000GB HDD, 2GB RAM	"One of the best all-round value PCs we've seen."	95%
Excel Computers Excel AL-2000 $1,999 www.excelcomputers.com.au	August 2009	3.16GHz Intel Core 2 Duo E8500, 2 x 1,000GB HDD, 2GB RAM	"A do-just-about-everything PC with excellent gaming speed."	85%
Pacstar Australia Bluestar 2009 $1,999 www.pacstarcomputer.com.au	August 2009	3.16GHz Intel Core 2 Duo E8500, 2 x 1,500GB HDD, 2GB RAM	"It may not be built for speed, but it's about as comfy as computing can get."	85%
TI Computers Extreme Power 2000 (Overclock Edition) $1,999 www.ticomputers.com.au	August 2009	2.66GHz Intel Core i7 920 (overclocked to 4GHz), 2 x 500GB HDD, 3GB RAM	"The fastest air-cooled PC we've ever seen."	85%
BenQ eScreen i91 $899 www.benq.com.au	July 2009	AMD Sempron U210 1.6GHz, 160GB HDD, 1GB RAM	"Not blindingly quick, but this is the best nettop we've seen so far."	85%
Excel Computers Excel AL-250 $1,499 www.excelcomputers.com.au	July 2009	Intel Core 2 Duo E8400 3GHz, 2 x 750GB HDD, 2GB RAM	"For $1,499, this one delivers a very decent slice of everything."	85%
Excel Computers Excel MC-465 $999 www.excelcomputers.com.au	July 2009	Intel Pentium Dual-Core E5200 2.5GHz, 1,000GB HDD, 2GB RAM	"It's not perfect, but you get a bit of everything."	85%
PC eXpress Invader 503B2 $1,499 www.pc-express.com.au	July 2009	Intel Core 2 Duo E8500 3.16GHz (overclocked to 3.8GHz), 1,000GB HDD, 2GB RAM	"Truckloads of speed and other extras; you'll struggle to find better at this price."	85%
Excel Computers Excel P-285 $1,999 www.excelcomputers.com.au	May 2009	Intel Core 2 Duo E8500 3.16GHz (overclocked to 3.99GHz), 2 x 750GB HDD, 2GB RAM	"All-round processing and gaming goodness here."	90%
TI Computers TI Power 2000 $1,999 www.ticomputers.com.au	May 2009	Intel Core 2 Duo E8500 3.16GHz, 3 x 500GB HDD, 2GB RAM	"A different build to the Excel system, but barely a struck match between them."	85%
PC eXpress Phoenix 4000B $2,999 www.pc-express.com.au	May 2009	Intel Core i7 920 2.66GHz, 2 x 1,000GB HDD, 3GB RAM	"Has the slowest clock speed, but the Crysis numbers tell a different story."	85%
Pacstar Australia Super Value 2009 $999 www.pacstarcomputer.com.au	April 2009	2.5GHz Intel Pentium Dual-Core E5200 (3.3GHz), 750GB HDD, 2GB RAM	"Overclocked CPU with truckloads of speed and even a 22in monitor."	90%
TI Computers TI Deluxe 2000 $1,999 www.ticomputers.com.au	February 2009	Intel Core 2 Duo E8600 3.33GHz, 2 x 1,000GB HDD, 2GB RAM	"A PC with rip-roaring speed and an easier gaming upgrade plan."	90%
Pacstar Australia 24in HD Value PC $1,999 www.pacstarcomputer.com.au	February 2009	Intel Core 2 Duo E8500 3.16GHz, 1,000GB + 2 x 640GB HDD, 2GB RAM	"The only 24in LCD monitor in the roundup and lots of neat extras make this a great alternative."	85%
PC eXpress Invader 506B $1,999 www.pc-express.com.au	February 2009	Intel Core 2 Duo E8500 3.16GHz, 2 x 1,000GB HDD, 2GB RAM	"Cracking performance for the price makes this one hard to beat."	85%

NOTEBOOKS

Product	Review issue	Key specs	PC User says	Value rating
MSI Wind U100 $640 www.msicomputer.com.au	March 2009	1.6GHz Intel Atom N280, 1GB RAM, 160GB HDD, 10.1in TFT	"The best netbook we've seen so far."	90%
MSI EX300 $1,580 www.msicomputer.com.au	March 2009	2.26GHz Intel Core 2 Duo P8400, 2GB RAM, 250GB HDD, 13.3in TFT	"Excellent mix of features, portability, speed and price."	90%
MSI EX720 $1,650 www.msicomputer.com.au	March 2009	2.26GHz Intel Core 2 Duo P8400, 4GB RAM, 320GB HDD, 17.1in TFT	"A 17in notebook loaded with features at this price is a damn fine effort."	90%
Dell Latitude E4300 $3,366 www.dell.com.au	March 2009	2.4GHz Intel Core 2 Duo P9400, 4GB RAM, 160GB HDD, 14.1in TFT	"On a performance per dollar basis, the E4300 is a clear winner."	85%
Dell Studio 15 $1,999 www.dell.com.au	March 2009	2.5GHz Intel Core 2 Duo T9300, 4GB RAM, 320GB HDD, 15.4in TFT	"The Dell Studio 15 has good speed, lots of extras and a nice price."	85%
HP Compaq 6730B FP582PA $1,600 www.hp.com.au	March 2009	2.26GHz Intel Core 2 Duo P8400, 2GB RAM, 160GB HDD, 15.4in TFT	"An ideal, no-nonsense notebook with good speed and battery life."	85%
MSI PR201 $1,500 www.msicomputer.com.au	March 2009	2GHz Intel Core 2 Duo P7350, 2GB RAM, 250GB HDD, 12.1in TFT	"The best 12.1in ultraportable notebook we've seen for under $2,000."	85%

Excel Computers Excel P-285

$1,999 / EXCEL COMPUTERS

(02) 9649 6668

www. excelcomputers.com.au

With an almighty overclock, this system features Intel's 3.16GHz Core 2 Duo E8500 running at 3.99GHz. With the GeForce GTX 285 graphics card, it tore through our gaming benchmarks. It's also got plenty of storage in the form of two 750GB Western Digital hard drives.

rating **90%**

MSI Wind U100

$640 / MSI

1800 021 167

www.msicomputer.com.au

We chose the Wind U100 as the best netbook in our recent roundup because of its price and extra features. The 160GB hard drive is roomy enough for most basic tasks, as is the 10.1in widescreen LCD. The keyboard is large enough to use comfortably and the 3 hour 40 minute battery life is very decent. You also get 802.11n wireless networking and Bluetooth.

rating **90%**

DVICO

THE ULTIMATE HOME ENTERTAINMENT
DIGITAL MEDIA SOLUTION.
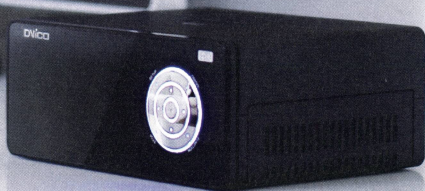
TVX HD R-3300

HD 1080i PVR & Media Player all in one solution
3.5" SATA Storage capacity, fully upgradable
High Def Dual Digital Tuner with timeshifting
Major Video, Audio and Image formats supported for
playback and storage

Wired and Wireless LAN capabilities supported
2 USB Host Ports for external drives
Sleek and attractive high quality design
Attractive price compared to similar products

NSW: Mwave 02 9649 6184 www.mwave.com.au
Tech Buy 02 9648 1818 www.techbuy.com.au
EYO Technology 02 9790 8822 www.eyo.com.au
TX Computer Solutions 02 9648 0055 www.txcomputer.com.au

QLD: Information Technology & Support Direct (ITSD)
07 5408 5588 www.itsdirect.com.au
Gamedude Computers 07 3387 1500 www.gamedude.com.au
Umart Online 07 3369 3928 www.umart.com.au
David Porter & Associates (DPANDA) 07 3272 2212
www.dpanda.com.au

VIC: Computers & Parts Land 03 9548 7088 www.cpl.net.au
Centre Com Sunshine 1300 007 600 www.centrecom.com.au
Scorpion Technology 1300 726 770 www.scorptec.com.au
I-Store 03 9894 8466 www.i-store.com.au
Ryrie Office Machines 03 5229 3322 www.ryrieoffice.com.au

NT: Hallmark Computer International 08 8981 9111 www.hallmark.com.au

SA: Leader Computers 08 8112 6010 www.leadersystems.com.au

WA: Direct Memory Access 08 9204 7088 www.dma.net.au

Also Technology
www.alsotech.com.au

TP-LINK®

The Reliable Choice

HIGH GAIN ANTENNA
4dBi

USB CONNECTOR
2.0

TL-WN422G
High-Gain Wireless USB Adapter

· 2.4GHz Wireless

· 4dBi detachable omni-directional antenna

· up to 54Mbps

· 802.11 b/g compatible

The TP-LINK TL-WN422G Wireless USB Adapter gives you the flexibility to deploy your PC or notebook PC in the most convenient locations available, without the inconvenience of running network cables for connectivity.

adjustable antenna

TL-WN422G
High-Gain Wireless USB Adapter

China's No.1
TP-LINK
China's No.1
Market Share Holder

3 years warranty

b g **WiFi** CERTIFIED®

www.tp-link.com.a

Anyware
COMPUTER ACCESSORIES
www.anyware.com.au

Exclusive Distributor for Australia
PH: 1300 269 927

Anyware is a wholesaler and does not sell direct to public. The above products can be purchased from most independent computer dealers throughout Australia. Call the number above for your nearest reseller.

TP-LINK®
The Reliable Choice

UPGRADE YOUR SOHO NETWORKING TO **GIGABIT**

TL-SG1008
8 port Gigabit Ethernet Switch

TP-LINK TL-SG1008 is a high performance Smart Gigabit switch that provides an ideal solution for workgroup or department Gigabit applications.

TL-SG1016
16 port Gigabit Ethernet Switch

The TL-SG1016 is specially designed for Ethernet (10Mbps), Fast Ethernet (100Mbps) and Gigabit Ethernet (1000Mbps) with seamless link. Each port supports up to 2000Mbps throughput in full duplex mode. It is the perfect choice to improve the performance of Offices and Workgroups networks

TL-SG1008D
8 port Gigabit Ethernet Switch
- plastic enclosure

The TL-SG1008D 8-port Gigabit Ethernet Switch provides you with a high-performance, low-cost, easy-to-use, seamless and standard upgrade to improve old network to 1000Mbps network. Increase the speed of your network server and make Gigabit to the desktop a reality!

All orders will be sent by Express Post!

For wholesale inquiries contact Adscroll australia 02 9882 1666

SALES: 02 9223 2360

Sales@tegcom.com.au ALL PRICES INCLUDE GST

Smudge tested under water for 36 hours

Create superior photo prints with your inkjet printer
- Glossy finish for true photo quality
- Compatible with all inkjet printers
- Bright white for high colour saturation
- Ideal for use with TONNY inks

BUY 3 PHOTO PAPER & GET 1 FREE! *Of equal value or less

Premium Photo Quality Paper
- 110gsm
- 100 sheets
A4 (210x297mm)... $8.50 TPP3811

Glossy Photo Paper
- 187gsm
- 20 sheets
A6 (105x148mm)... $3.90 TPP1846
A4 (210x297mm)... $8.70 TPP1811

Premium Glossy Paper
- 256gsm
- 20 sheets
A6 (105x148mm)... $4.70 TPP2846
A4 (210x297mm)... $13.90 TPP2811

Epson Ink Cartridges

Model	Genuine	TONNY
T028	$43.60	$4.40
T029	$39.10	$4.90
T038	$20.00	$5.00
T039	$28.40	$5.60
T0461	$22.00	$4.50
T0472/3/4	$14.90	$4.50
T0491/2/3	$21.00	$4.50
T0494/5/6	$21.00	$4.50
T0621	$22.00	$5.20
T0631	$16.00	$5.20
T0632/3/4	$15.20	$5.20
73N BK (T0731)	$17.00	$7.40
73N C/M/Y (T0732/3/4)	$17.00	$7.40
81N BK (T0811)	$27.00	$8.40
81N C/M/Y (T0812/3/4/5/6)	$27.00	$8.40
S020089 / T052	$35.10	$4.80
S020093 / T050	$29.00	$4.80
S020187/T050	$28.00	$4.80
S020189/ T051	$32.00	$4.80
S020191 / T052	$34.00	$4.80

Canon Ink Cartridges

Model	Genuine	TONNY
BX-3	$47.00	$23.10
BC-05	$59.60	$26.70
BC-20	$62.00	$22.90
PG-40	$34.00	$24.00
CL-41	$35.00	$26.50
BCI-3eBK	$22.70	$6.40
BCI-3eC/M/Y	$20.40	$5.70
BCI-6BK	$24.10	$5.70
BCI-6C/M/Y	$24.10	$5.70
BCI-6PC/PM	$24.10	$5.70
BCI-6G/R	$24.10	$5.70
CLI-8BK/pc/pm with chip	$22.50	$9.80
CLI-8C/M/Y with chip	$22.50	$9.80
PGI-5BK with chip	$22.50	$9.80
CLI-8BK no chip		$5.70
CLI-8C/M/Y no chip		$5.70
CLI-8PC/PM no chip		$5.70
PGI-5BK no chip		$5.70
BCI-15BK	$24.90	$6.10
BCI-16C	$40.70	$6.30
PG-510	$24.10	
CL-511	$27.40	
PGI520BK	$19.30	$9.80 NEW
CLI521BK/C/M/Y	$19.30	$9.80
BCI-24BK	$15.30	$5.60
BCI-24C	$31.00	$6.90

Rated 9 out of 10 by PC User

Kyocera Toner Cartridges

Model	Genuine	TONNY
TK-16H	$73.00	$61.00
TK-17	$103.00	$35.00
TK-18	$123.00	$38.00
TK-310	$172.00	$59.00
TK-510K	$98.00	
TK-510C/M/Y	$172.00	

Panasonic Toner Cartridges

Model	Genuine	TONNY
UG-3313	$242.00	$73.00
UG-5545	$242.00	
KX-PDP8 Toner for KXP7100/7110	$136.00	$68.00

Lexmark Ink Cartridges

Model	Genuine	TONNY
18C0781A (#1)	$36.90	$24.60
10N0016 (#16)	$49.30	$18.40
15M0120 (#20)	$63.60	$24.00
10N0026 (#26)	$53.00	$23.00
18C0032 (#32)	$36.90	$24.30
18C0033 (#33)	$39.80	$23.10
18C0034 (#34)	$41.60	$25.00
18C0035 (#35)	$49.30	$27.00
12A1970 (#70)	$55.50	$22.10
18L0032 (#82)	$52.00	$26.10
18L0042(#83)	$62.60	$23.90

Brother Ink Cartridges

Model	Genuine	TONNY
LC-37BK	$25.20	$5.00
LC-37C/M/Y	$15.90	$6.50
LC-38BK	$24.50	$5.00
LC-38C/M/Y	$15.90	$6.50
LC-47BK	$34.60	$5.00
LC-47C/M/Y	$20.80	$6.50
LC-57BK	$34.60	$5.00
LC-57C/M/Y	$20.80	$6.50

HP Ink Cartridges

Model	Genuine	TONNY
C8721WA (#02BK)	$28.20	$11.00
C8771/2/3/4/5WA (#02C/M/Y/LC/LM)	$16.60	$8.20
C6615DA(#15)	$42.40	$14.10
C9351A (#21)	$24.00	$16.00
C9352AA (#22)	$27.30	$21.00
C8727AA(#27)	$28.90	$14.10
C8728AA (#28)	$33.00	$22.00
51645AA (#45)	$44.70	$16.00
C6656AA (#56)	$30.60	$15.20
C6657AA (#57)	$48.90	$23.00
C6658AA (#58)	$38.80	$23.00
C8396WA(#74XL)	$44.80	$29.50
C8398WA (#75XL)	$49.80	$30.00
C6578DA (#78)	$48.80	$19.90
C3396AA (#88)	$49.60	$21.30
C9391/2/3AJ#88C/M/Y)	$58.40	$14.70
C8362WA (#92)	$23.20	$14.70
C9361WA(#93)	$34.00	$16.90
C8765WA(#94)	$31.30	$16.90
C8766WA(#95)	$44.00	$22.00
C8767WA(#96)	$44.80	$18.10
C9363WA(#97)	$50.20	$15.80
C9364WA (#98)	$26.40	$15.80
C9369WA (#99)	$37.80	$26.20

HP Toner Cartridges

Model	Genuine	TONNY
Q2610A	$183.00	$55.00
Q6511X	$316.00	$79.00
Q2612A	$106.00	$45.00
Q2613A	$109.00	$45.00
C7115A	$95.00	$45.00
Q7516A	$276.00	$105.00
C4127X	$194.00	$59.00
CB435A	$95.00	$54.00
CB436A	$107.00	$54.00
Q1338A	$235.00	$85.00
Q5942A	$226.00	$95.00
Q5942X	$343.00	$105.00
Q5949A	$109.00	$45.00
Q5949X	$201.00	$55.00
Q7551X	$330.00	$76.00
Q7553A	$123.00	$55.00
Q7553X	$227.00	$59.00
C8061X	$194.00	$59.00
C4092A	$90.00	$45.00
C4096A	$153.00	$59.00

HP Color Toner

Model	Genuine	TONNY
CB540A	$109.00	$81.00
CB541/2/3A	$99.00	$81.00
Q6000A	$116.00	$78.00
Q6001/2/3A	$116.00	$78.00
C9730A	$339.00	$159.00
C9731/2/3A	$469.00	$159.00

Black or Colour Ink refill Kits for Canon, Epson HP and Lexmark $4.95

Brother Toner Cartridges

Model	Genuine	TONNY
TN-2025	$81.20	$49.00
DR-2025	$149.20	$62.00
TN-2150	$85.00	$49.00
DR-2150	$147.00	
TN-3060	$117.00	$49.00
TN-3185	$123.00	$49.00
TN-6600	$110.90	$49.00
TN-7600	$115.00	$49.00
TN-8000	$47.00	$19.00
TN-04BK	$243.00	$99.00
TN-04C/C/Y	$243.00	$99.00
TN-12BK	$129.00	$72.00
TN-12C/M/Y	$263.00	$105.00
TN-150 BK	$95.00	
TN-150 C/M/Y	$109.00	

Samsung Laser Toner

Model	Genuine	TONNY
SCX-4200D3	$123.00	$49.00
SCX-4216D3	$123.00	$49.00
SCX-D4200A	$123.00	$49.00
SCX-4521D3	$126.00	$49.00
SCX-D4725A	$123.00	$64.00
SCX-5312D6	$96.00	$70.00
SF-5100D3	$123.00	$49.00
ML-1210D3	$123.00	$49.00
ML-1610D2	$114.00	$49.00
MLT-D108S	$95.00	
MLT-D109S	$145.00	
MLT-1710D3	$123.00	$49.00
ML-2010D3	$113.00	$49.00
ML-2150D8	$219.00	$49.00
ML-2250D5	$144.00	$59.00
ML-D3050B 8k	$288.00	$86.00

Canon Toner Cartridges

Model	Genuine	TONNY
CART 303(Q2612A)	$89.00	$45.00
CART 308(Q5949A)	$99.00	$49.00
CART 310 II(Q6511X)	$264.00	$79.00
CART 312	$81.00	
EP-22 (C4092A)	$75.00	$45.00
EP-26	$99.00	$45.00
CART307BK(Q6000A)	$99.00	$78.00
CART307CMY(Q6001/2/3A)	$105.00	$78.00
CART 301 BK (EP87 BK)	$125.00	$77.00
CART 301 C/MY (EP87CMY)	$140.00	$77.00
CART311BK	$155.00	
CART311C/M/Y	$199.00	
FX-3	$99.00	$45.00
FX-7	$139.00	$65.00
FX-9	$120.00	$49.00
CARTN	$231.00	$69.00
CARTU	$105.00	$45.00
CARTW	$149.00	$53.00
E-31	$195.00	$55.00

Samsung Color Laser Toner

Model	Genuine	TONNY
CLP-300A BK	$95.00	$36.00
CLP-300A C/M/Y	$86.00	$35.00
CLP-300A BK for CLP-310/315,CLX-3170/3175	$74.00	
CLP-409S C/M/Y for CLP-310/315,CLX-3170/3175	$63.00	
CLP-510D7 BK	$153.00	$92.00
CLP-510D5 C/M/Y	$171.00	$92.00
CLP-600A BK	$131.00	$123.00
CLP-600A C/M/Y	$184.00	$126.00

Konica Minolta Color Laser Toner

Model	Genuine	TONNY
QMS Magicolor 2300/2350 BK	$121.00	$69.00
QMS Magicolor 2300/2350 C/M/Y	$161.00	$69.00
QMS Magicolor 2400W/2430DL/2450 BK	$119.00	$85.00
QMS Magicolor 2400W/2430DL/2450 C/M/Y	$164.00	$85.00

For purchase under $50 on TONNY Cartridges a standard freight charge of $6.50 applies for all areas within Australia.

GZ-X Series

GZ-X1 **GZ-X2** **GZ-X3** **GZ-X4**

GZ-X5 **GZ-X6** **GZ-X7** **GZ-X8** **GZ-X9**

GZ-M Series

GZ-M1 **GZ-M2** **GZ-M3**

GIGABYTE Cares! ♥
RoHS
Green Computing

Gigabyte chassis features:
- Stylish front panel
- Easy access front I/O array
- RoHS ready
- Integrated thermal solution housing exhaust and optional intake fans.

Lifestyle audio system, more with your music

DIVOOM
www.divoom.com

REVO -3

HI-Glossy **newDesign**
HGF(High Grossy Finishing)

60WATT Multimedia Subwofer Speaker

AURORA-3 — Subwofer

MORRO-221 — Subwofer

MORRO-220 — USB SPEAKER
Dimension 73 x 90 x 208mm

iTOUR 10 PORTABLE SPEAKER
Speaker for Mobile Phone/PC/MP3/MP4

Product Specifications

Total RMS Power : 60 Watts
Subwoofer: 30 Watts RMS into 4ohms at 100Hz at 10% THD
Satellites : 30 Watts RMS(2x15w) into 4ohms at 1kHz at 10% THD
Total Peak Power: 80 Watts at<10% THD
System THD: Better than 0.05% THD before clipping
Signal to noise ratio: >85dB
Frequency response: 20Hz-20kHz
Driver Size :3"+1.5" high excursion satellites, 5.25"high excursion subwoofer
Speaker dimensions
Satellites :92W x 135D x 250H (mm)
Subwoofer : 145W x 300D x 310H (mm)

12-Months Replacement Warranty
For Nearest Reseller or Product Enquiries:
Please call 02 9648 0666
Or email to sydney@ictcentury.com
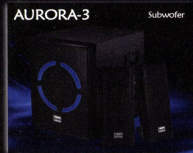
ICTentury ®

Authorized Distributor in Australia

Website: www.ictcentury.com   Ph: 02 9648 0666

Think smart.
Stay safe.

The web can be a dangerous place, but with the right software, you can surf safely.

By the time you finish reading this sentence, approximately 70 new variants of malware – viruses, Trojans, worms, rootkits, spyware, and more – will have been released.

Classic antivirus software is no longer enough to protect your PC. With thousands of new threats being launched every day, many under the radar of antivirus vendors, the window of opportunity for criminals to exploit vulnerabilities grows ever wider.

ESET pioneered and continues to lead the industry in proactive threat detection. From its global headquarters, the company has been developing software solutions that protect against evolving computer security threats.

Powered be ESET's Threatsense technology, an advanced heuristics engine, ESET provides antivirus protection through its flagship NOD32 Antivirus, and complete desktop security with ESET Smart Security which brings together antivirus, anti-spam, anti-spyware and a personal firewall in one fully integrated package.

Unlike traditional approaches, ESET decodes and analyses executable code in real time in an emulated environment. By allowing malware to execute in a secure virtual world, ESET security products are able to

clearly differentiate between benign files and even the most sophisticated and cleverly disguised malware.

However, don't think all this virtual world technology will slow down your computer. Besides being famous for protection, our products require significantly less memory and CPU power than our competitors. This means no waiting for applications to load and no more long delays when surfing the web - minimal impact with maximum protection.

With ESET you can just use your computer for what it was intended and let us protect you in the background.

But don't just take our word for it . . . . . ESET has won more Virus Bulletin VB100 Awards than any other vendor, and consistently achieves top ranking in independent security software tests.

ESET   we protect your digital worlds

ESET Australia - 07 3325 2999 - www.eset.com.au
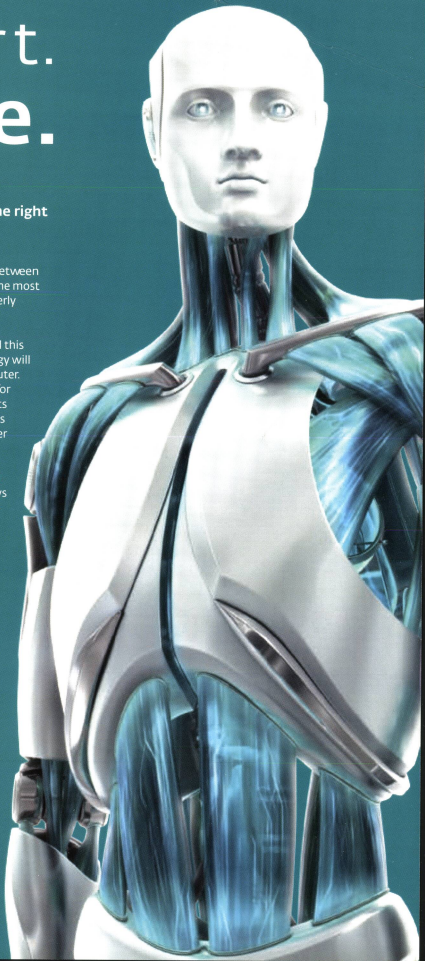
EPSON
EXCEED YOUR VISION

Affordable.
Reliable.
Productive.
Stylish.
Believe the hype.

Epson Stylus™
Office TX600FW
$249 RRP

Epson Stylus™
Office TX300F
$149 RRP

Across Australia, **Epson Stylus™ Office** printers are generating excitement for their reliability, productivity and style. But did you know they are also affordable? For $149, take home fax capabilities as well as fast print, copy and scan speeds. For $249, you can print up to 38ppm, connect using WiFi and Ethernet, make your selections using a 2.5" colour LCD viewer and choose high capacity ink cartridges. Also, individual ink cartridges on all models mean you only replace the cartridge you use.

Choose from the **Epson Stylus™ Office** range and see how you can increase efficiency and productivity in your small office for an affordable price!

Epson Stylus™
Office T40W
$149 RRP

Epson Stylus™
Office T30
$99 RRP

For further information please call **1300 361 054.**
See **www.epson.com.au** for details.
RRP prices include GST.